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# HEALTH IMPACTS OF CARS IN LONDON

**MAYOR OF LONDON**

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# EXECUTIVE SUMMARY

## **Purpose of this document**

London policy makers and public health professionals have asked for the evidence base for private car use and the impacts of cars on health in the city.

This document outlines the background to car travel in London including car ownership, the types of journey made by cars, the reasons given for car use and the health impacts of car use.

## **Key points**

### *Car Ownership in London*

- Household car ownership in Greater London is significantly lower than the average in England.
- Household car ownership increases with household income. However, car ownership remains static at around 80% for households with an income over £75,000.
- Household car ownership tends to be lower in areas with better access to public transport.
- People choose to own a car for a combination of practical and emotional reasons.

### *Car Use in London*

- Most journeys by Londoners are not by car, only a third of journey stages in London are by private transport.
- Car use increases as the level of household car ownership by borough increases.
- Over one third of all the car trips made by London residents are less than 2km and could be walked in up to 25 minutes.
- Habit strongly influences choice of travel mode.

### *Health Impacts of Car Use in London*

Most people in London do not use cars regularly but car use impacts on everybody's health.

Car use impacts on the health of car users through:

1. Physical Inactivity
  - Car ownership is linked to how much walking and cycling Londoners do. Walking levels decrease significantly as household car ownership increases.
  - In London children living in households without access to a vehicle are 2.3 times more likely to walk to school than children living in households with vehicle access.

- Car use is associated with an increased risk of obesity while walking and public transport use are associated with not being overweight or obese.
- Walking is a universal activity in London.
- In London half of all walking is carried out as part of trips by public transport.

## 2. Air Pollution

- Car drivers can be exposed to higher levels of air pollution than cyclists.

Car use impacts on the health of all Londoners through:

1. Road traffic injuries and deaths
2. Noise
3. Severance
4. Air pollution
5. Climate change

### *Reducing Car Use in London*

- There are many short car journeys made by London residents which could easily be switched to walking or cycling:
  - 1.6 million car trips per day could potentially be walked.
  - 2.7 million car trips per day could potentially be cycled.
- Reducing car use in London would bring health benefits to all Londoners.
- If Londoners swapped motorised trips that could reasonably be walked and cycled, 60% of them would meet the recommended 150 minutes of physical activity per week through active travel alone. The population of London would gain over 60,000 years of healthy life every year which would deliver an economic health benefit of over £2 billion annually.

For further information on the health impacts of cars:

- visit [www.london.gov.uk/transport-and-health](http://www.london.gov.uk/transport-and-health) or
- contact [Katie.Hunter2@london.gov.uk](mailto:Katie.Hunter2@london.gov.uk) or [Lucy.Saunders@london.gov.uk](mailto:Lucy.Saunders@london.gov.uk)

# CAR USE IN LONDON

## The role of cars in travel in London

London is unusual because unlike the rest of the UK it has very low private car use. In 2013, 45% of journey stages in London were made by public transport, 33% by private transport, 21% by walking and 2% by cycling.<sup>1</sup>

In London there is a continuing shift away from private motorised transport to public transport modes: the proportion of all trips made by public transport has increased 10.6 percentage points since 2000.<sup>2</sup>

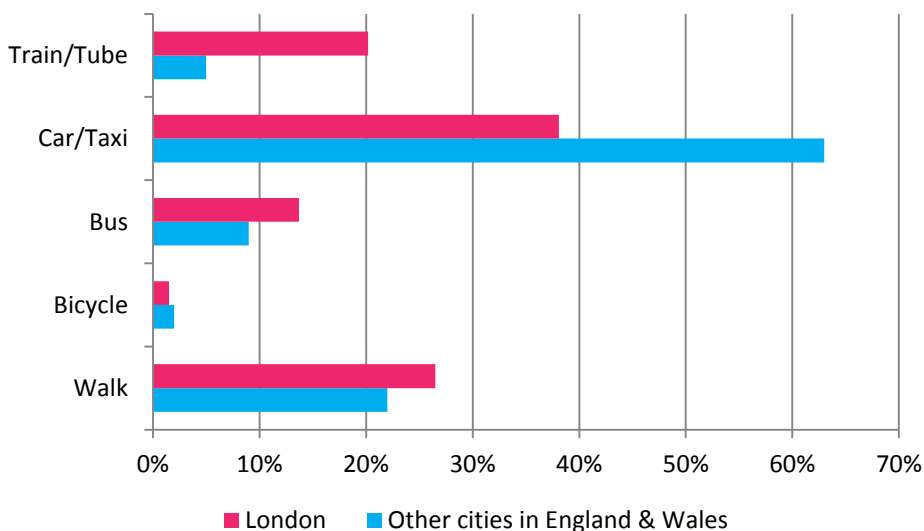
### What is a journey stage?

A **trip** is defined as a one-way movement from an origin to a destination to achieve a specific purpose, for example, to go from home to work.

This trip might involve three **journey stages**: a walk from home to the bus stop, a bus journey and then another walk from the bus stop to work.

Londoners spend the greatest proportion of their travel time in cars (including taxis), 38%, and walking (including walking stages of public transport trips), 27%. However, Londoners spend more time walking and using public transport (and less time in cars) than adults living in other urban areas of England and Wales.<sup>3</sup> These differences are illustrated in figure 1.

**Figure 1:** Percentage of travel time spent on each type of transport 2005–2011



<sup>1</sup> Travel in London 7 (2014) Transport for London pg.25

<sup>2</sup> Travel in London 7 (2014) Transport for London pg.25

<sup>3</sup> Transport and health in London: The main impacts of London road transport on health. (2014) Greater London Authority [http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London\\_March%202014.pdf](http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London_March%202014.pdf)

### Household car ownership in London

Household car ownership in Greater London is significantly lower than the average in England, and lower than some other major cities in England including Birmingham, Leeds and Sheffield.<sup>4,5</sup>

**Table 1:** Household car or van availability in unitary authorities and regions of England, 2011 Census <sup>5</sup>

	Percentage of households with access to a car or van (%)
England	74
<b>Greater London</b>	<b>58</b>
<b>Outer London</b>	<b>69</b>
<b>Inner London</b>	<b>43</b>
Birmingham	64
Leeds	68
Sheffield	67
Liverpool	54
Manchester	56

Household car ownership in Greater London has not changed substantially since 2005/06.<sup>6</sup>

Londoners are more likely to own a car if they:<sup>7</sup>

- live in outer London
- live in an area with reduced access to public transport
- have a higher income
- have a child living in the household
- are of Western European nationality

<sup>4</sup> National Travel Survey statistics (2014) Department for Transport

<https://www.gov.uk/government/statistical-data-sets/nts02-driving-licence-holders>

<sup>5</sup> 2011 Census: Key Statistics for England and Wales (2011) Office for National Statistics

<http://www.ons.gov.uk/ons/rel/census/2011-census/key-statistics-for-local-authorities-in-england-and-wales/stb-2011-census-key-statistics-for-england-and-wales.html>

<sup>6</sup> Travel in London 7 (2014) Transport for London pg.52

<sup>7</sup> How many cars are there in London and who owns them? (2013) Transport for London

<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-12-how-many-cars-are-there-in-london.pdf>

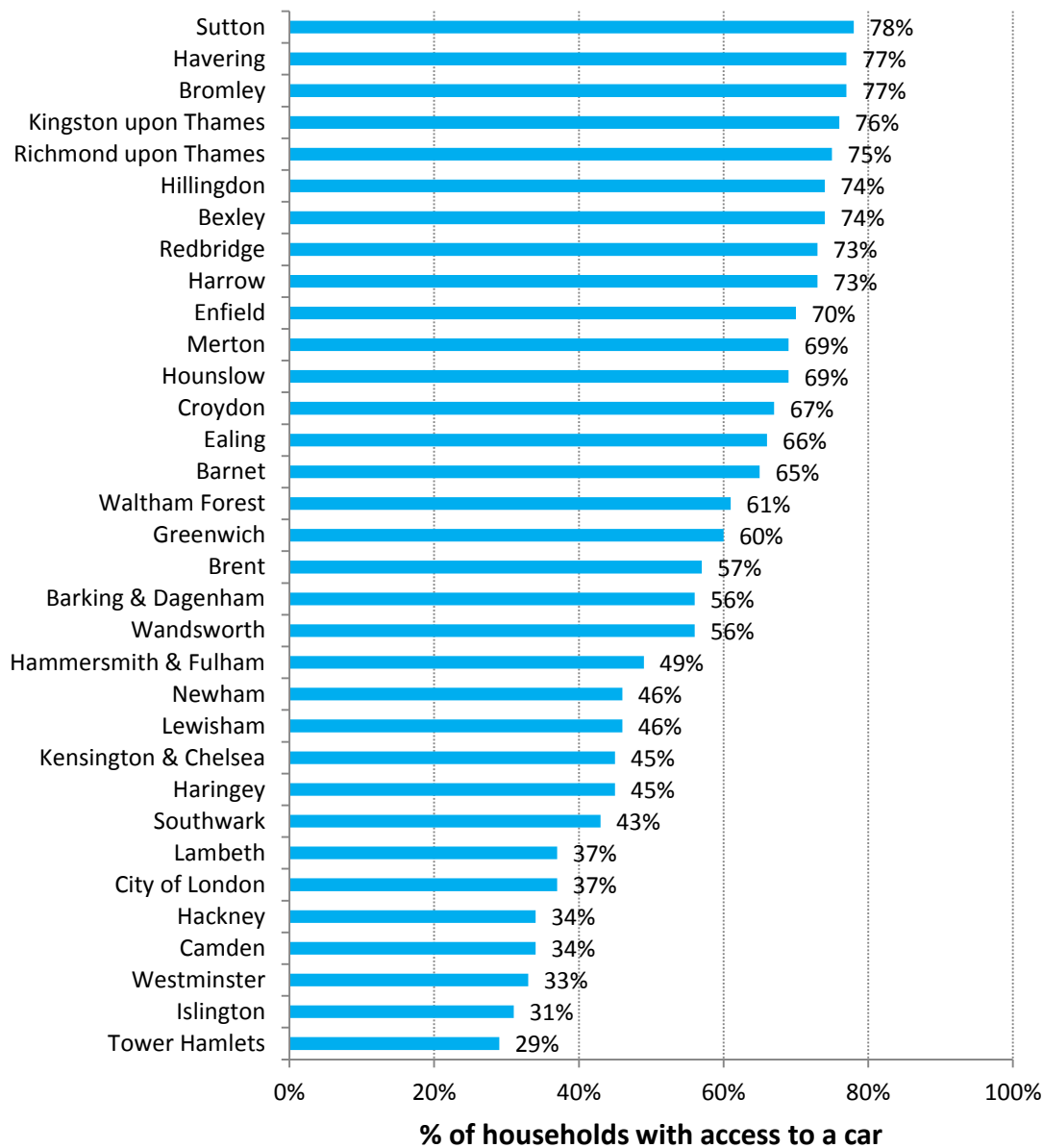


Overall, household car ownership is lower in inner London compared to outer London. However, household car ownership also tends to fall as access to public transport improves. This results in some areas of outer London with the best access to public transport having lower levels of household car ownership than some areas of inner London with poorer access to public transport.<sup>8</sup>

Figure 2 shows that the proportion of households with one or more cars varies by borough across London from:

- 78% in Sutton to
- 29% in Tower Hamlets.

**Figure 2:** Household car ownership by borough, London residents, 2013/14.<sup>9</sup>



<sup>8</sup> How many cars are there in London and who owns them? (2013) Transport for London

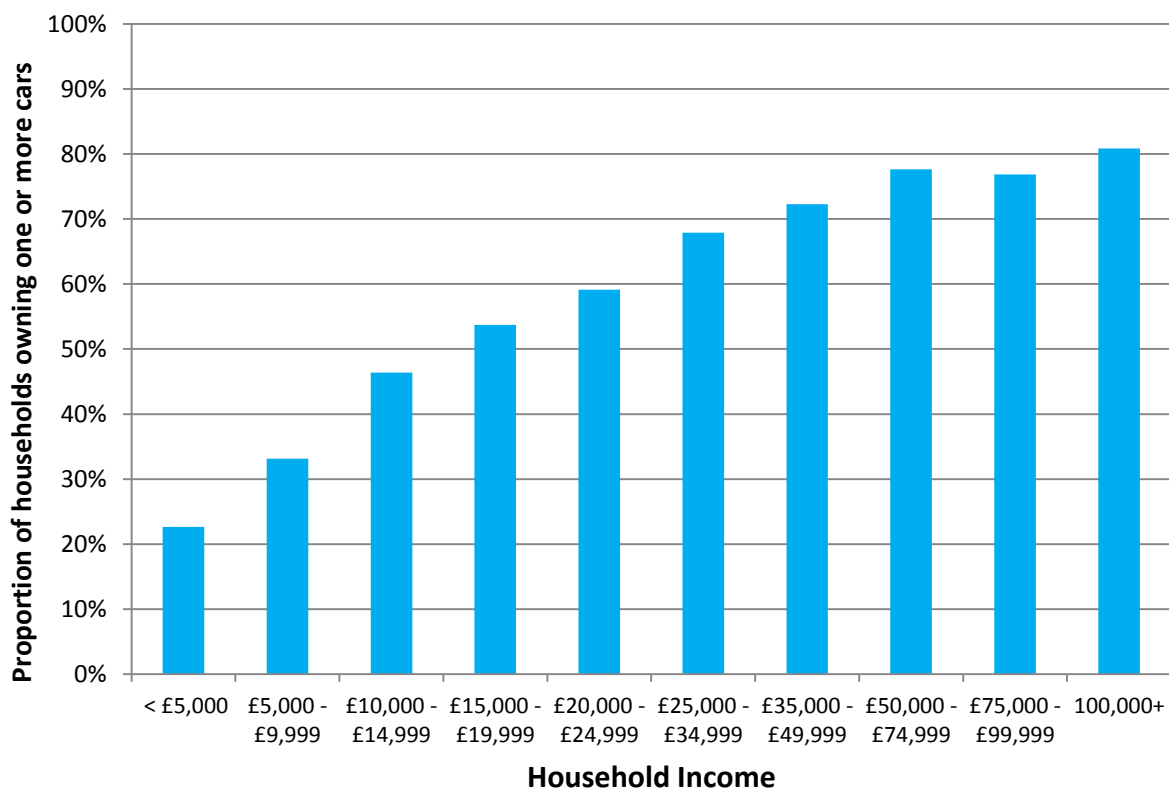
<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-12-how-many-cars-are-there-in-london.pdf>

<sup>9</sup> TfL London Travel Demand Survey 2013/14

The proportion of households owning a car increases as household income increases, from 23% in London households earning less than £5000 per year to 78% in households with incomes of £50,000 - £74,999 per year.<sup>10</sup>

However, as income increases further car ownership remains static at around 80%, therefore a fifth of higher income households in London appear to have chosen not to own a car. Thirteen per cent of London households have incomes over £75,000 per year.<sup>11</sup> This is illustrated in figure 3.

**Figure 3:** Household car ownership by household income, London residents, 2013/14.<sup>12</sup>



The proportion of young London residents, aged 17 to 19 years, with full car driving licences has fallen from 35% in 1991 to 16% in 2011, and adults under 35 are less likely to hold a driving licence than their predecessors.<sup>13</sup> Two thirds of Londoners who do not own a car do not hold a licence.<sup>14</sup>

<sup>10</sup> TfL London Travel Demand Survey 2013/14

<sup>11</sup> TfL London Travel Demand Survey 2013/14

<sup>12</sup> TfL London Travel Demand Survey 2013/14

<sup>13</sup> Long-term trends in travel behaviour: Cross-sectional cohort analysis of London residents' trip rates, car ownership and work-related travel. (2014) Transport for London pg. 19 <https://www.tfl.gov.uk/cdn/static/cms/documents/long-term-trends-in-travel-behaviour-cross-sectional-cohort-analysis.pdf>

<sup>14</sup> How many cars are there in London and who owns them? (2013) Transport for London

<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-12-how-many-cars-are-there-in-london.pdf>

## Attitudes towards car ownership in London

Car ownership can be seen as a tool for liberation, and restrictions on car use are seen by some as a restriction on personal freedoms. However, it is recognised that there can be a tension between personal freedom and the wider public good.<sup>15</sup> For example, under the Clean Air Act local authorities in London have declared the whole or majority of their boroughs to be a smoke control area. The Act makes it an offence for residents to burn wood or other unauthorised fuels which emit smoke from a chimney. The Act therefore restricts the personal freedom of individuals in order to protect all residents from air pollution and prevent a reoccurrence of the great smog of 1952.<sup>16</sup>

Although some London residents living in households without a car may aspire to owning a car, if every household in London owned a car, the volume of traffic and congestion in London would increase significantly. This would lead to prolonged journey times which would reduce personal mobility and therefore reduce the perceived convenience of car ownership.

Studies have shown that people choose to own a car for a combination of practical and emotional reasons.<sup>17</sup>

### Practical benefits / convenience:

- door-to-door service with no interchanges
- availability when needed '24/7'
- carrying luggage, shopping or equipment
- individual journeys are relatively cheap because the total costs are not always evident to trip makers (e.g. purchase costs, insurance and tax)

### Emotional benefits:

- sense of freedom
- independence and control
- self-worth/status
- personal safety/security
- seen as a 'social norm'

The key reasons London households choose not to own a car include:<sup>17</sup>

- cost
- stress of owning and driving a car in London
- car is unnecessary due to proximity of local services and availability of public transport
- difficulties with car parking
- congestion on the roads

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<sup>15</sup> Bayer, R. The continuing tensions between individual rights and public health. Talking Point on public health versus civil liberties. (2007) *EMBO Reports*, 8(12), 1099–1103. doi:10.1038/sj.embor.7401134

<sup>16</sup> Godlee, F. Air pollution: I--From pea souper to photochemical smog. (1991) *BMJ*, 303(6815), 1459–1461

<sup>17</sup> What are the motivations for owning a car? (2013) Transport for London

<https://tfl.gov.uk/cdn/static/cms/documents/technical-note-13-what-are-the-motivations-for-owning-a-car.pdf>

### Car trip purposes for Londoners

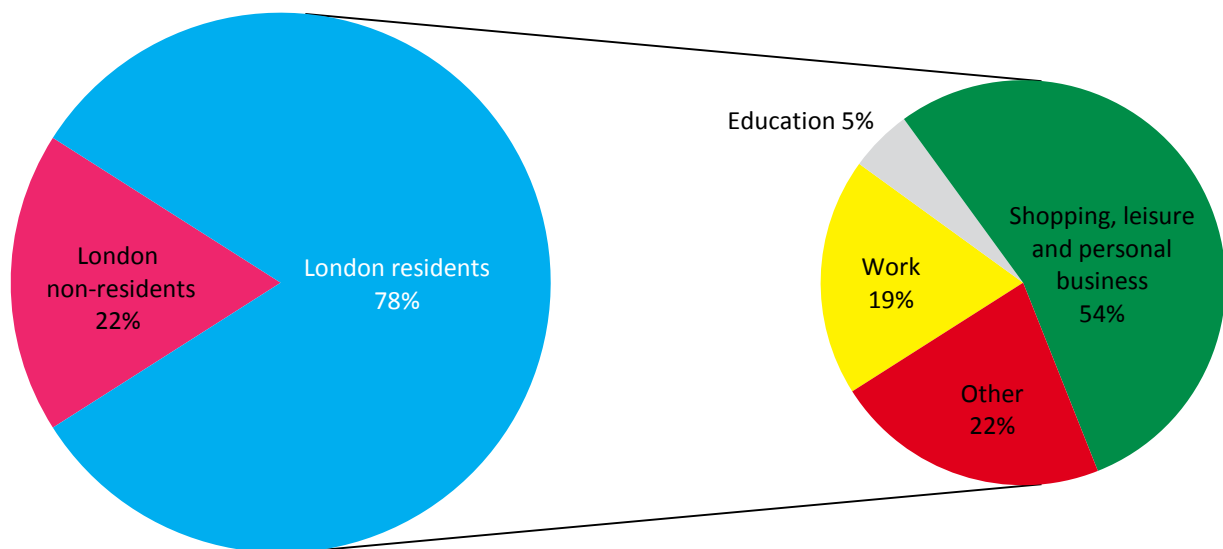
It is estimated that on average a total of 9.4 million car trips are made in London per day by residents and non-residents.<sup>18</sup>

London residents make 7.3 million car trips (78% of all car trips), as a driver or passenger, in London per day on average. Of these car trips:

- Over 50% are made for shopping, leisure and personal business purposes
- 19% are made for work purposes
- 5% for education<sup>19</sup>
- 22% for other purposes including worship and escorting others including escorting children to school<sup>20</sup>

Around 60% of car driver trips made by London residents are made with no passengers.<sup>21</sup> The purpose of car trips made by London residents is illustrated in figure 4.

**Figure 4:** Car (driver and passenger) trips by journey purpose. London residents, 2013/14.<sup>22</sup>



<sup>18</sup> Travel in London 7 (2014) Transport for London pg.23

<sup>19</sup> A large proportion of trips made for education will be car passengers i.e. a student dropped off at school, college or university would have a trip purpose of education, while the person dropping them off or picking them up would have a trip purpose of escort.

<sup>20</sup> TfL London Travel Demand Survey 2013/14

<sup>21</sup> Who travels by car in London and for what purpose? (2013) Transport for London

<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-14-who-travels-by-car-in-london.pdf>

<sup>22</sup> TfL London Travel Demand Survey 2013/14 and Travel in London 7

Over one third of all the car trips made by London residents are less than 2km. Table 2 shows the time it would take Londoners to travel if they switched these car trips to walking or cycling.

**Table 2:** Proportion of car trips by London residents by trip distance<sup>23</sup>, with average time taken to walk or cycle.

Proportion of all car trips	Walk time (fast – medium pace)	Cycle time (16km/hr)	Distance travelled	
			km	miles
15%	<b>Up to 9 - 12 mins</b>	Up to 4 mins	< 1	< 0.62
21%	<b>Up to 19 - 25 mins</b>	Up to 8 mins	1 - 2	0.62 - 1.24
13%	Up to 28 - 37 mins	<b>Up to 11 mins</b>	2 - 3	1.24 - 1.86
18%	Up to 47 - 62 mins	<b>Up to 19 mins</b>	3 - 5	1.86 - 3.11
34%		> 19 mins	> 5	> 3.11

Many car trips could be quicker by bike or foot:

**Under 25 minutes** = Over **one third of car trips** made by London residents as a driver or passenger could be **walked** in this time.

**Under 11 minutes** = **Nearly half of car trips** made by London residents could be **cycled** in this time.

**Under 19 minutes** = **Two thirds of car trips** made by London residents could be **cycled** in this time.

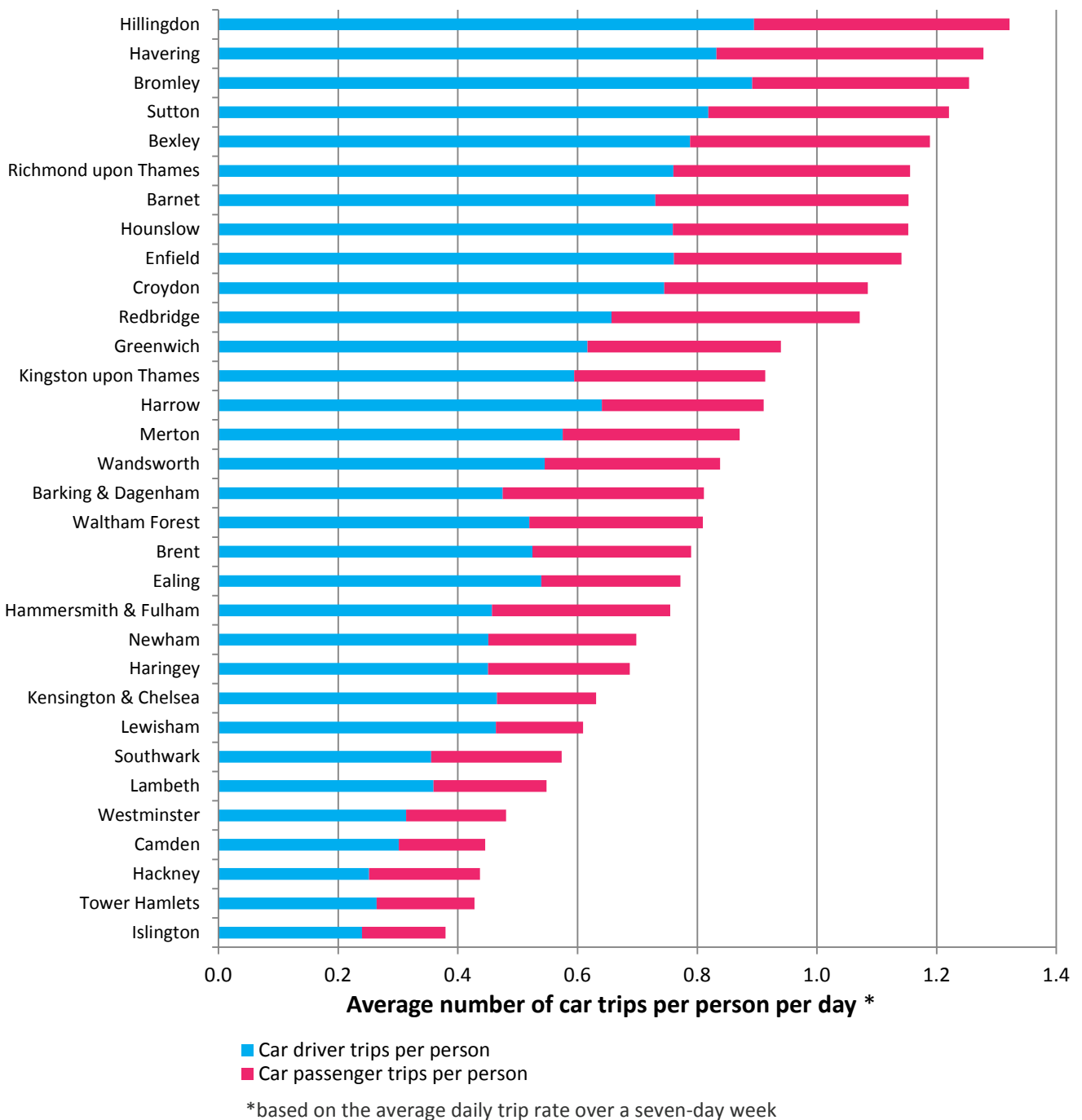
**Trips over 5 km** only make up **one third** of car trips. Some of these trips could be cycled in around 20 minutes.

<sup>23</sup> TfL London Travel Demand Survey 2013/14

**How does car use vary by borough?**

Car use by London residents varies between boroughs from 0.24 car driver trips per person per day in Islington to 0.89 car driver trips per person per day in Hillingdon and Bromley.<sup>24</sup> On average residents of boroughs in outer London have higher car driver trip rates than residents of most inner London boroughs.

**Figure 5:** Car use by borough of residence, 2013/14.<sup>25</sup>



<sup>24</sup> TfL London Travel Demand Survey 2013/14

<sup>25</sup> TfL London Travel Demand Survey 2013/14

Car driver trip rates generally decrease as access to public transport increases, as measured by the Public Transport Accessibility Level (PTAL).<sup>26</sup>

Car trip rates by residents of households with at least one child are around 50% higher than rates by those in households with no children, across all household income bands.<sup>27</sup>

Residents of households with an income less than £25,000 a year have particularly low car use, as drivers and passengers. Car driver trips<sup>28</sup> increase as household income increases up to £75,000, thereafter driver trip rates do not increase any further as household income increases. This is a similar pattern to the relationship between household car ownership and household income.<sup>29</sup>

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<sup>26</sup> For more information on PTAL see <http://data.london.gov.uk/dataset/public-transport-accessibility-levels>

<sup>27</sup> Who travels by car in London and for what purpose? (2013) Transport for London  
<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-14-who-travels-by-car-in-london.pdf>

<sup>28</sup> A car trip is defined as a one-way movement from an origin to a destination to achieve a specific purpose, for example, to go from home to work.

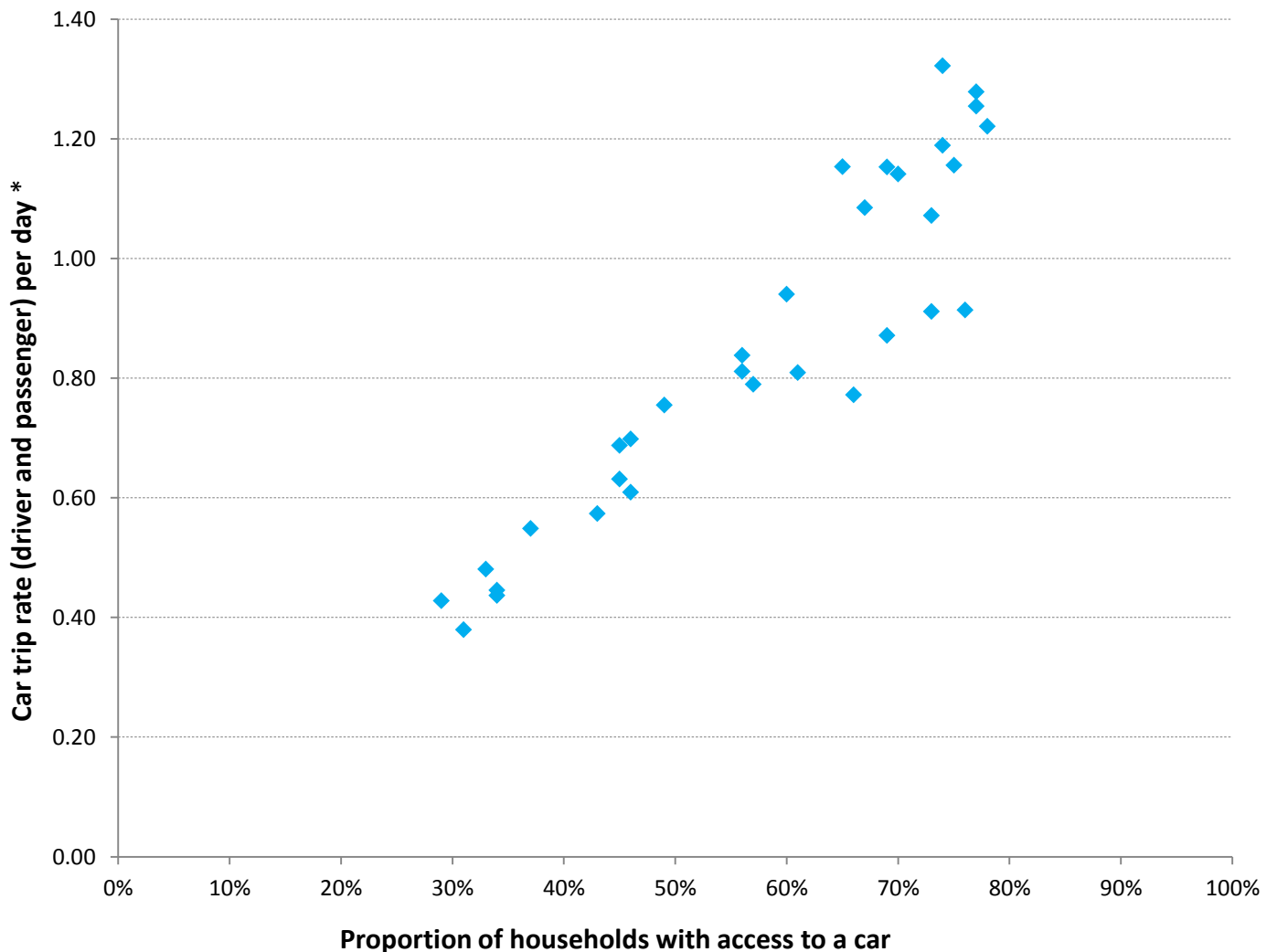
<sup>29</sup> Who travels by car in London and for what purpose? (2013) Transport for London  
<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-14-who-travels-by-car-in-london.pdf>

### What is the relationship between car ownership and car use in London?

Data from the London Travel Demand Survey (LTDS) shows that there is a strong positive relationship between household car ownership and average car trip rate by borough. As illustrated in figure 6, car use by borough increases as the level of household car ownership per borough increases.

This relationship between car ownership and car use suggests that measures that discourage car ownership would lead to a reduction in car use.

**Figure 6:** Relationship between household car ownership and average car trip rate by borough in 2013/14.<sup>30</sup>



\*based on the average daily trip rate over a seven-day week

<sup>30</sup> TfL London Travel Demand Survey 2013/14



### **What reasons do people give for travelling by car in London?**

The main reason that people give for travelling by car is ease and convenience. Other reasons given, roughly in descending order of importance are: <sup>31</sup>

- perceived travel time
- comfort
- carrying something bulky or heavy
- trip chaining (where a series of short trips are linked together between primary destinations e.g. a trip that leaves work, stops at the supermarket and then continues to home.)
- cost

Habit strongly influences choice of travel mode <sup>32</sup>

- Drivers don't tend to give much thought to which mode of travel they use.
- Drivers tend to be poor at perceiving the relative speed, cost or convenience of other transport options.

This helps to explain why people drive short distances which would be easier and quicker to travel using other modes.

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<sup>31</sup> Why do people travel by car? (2013) Transport for London  
<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-15-why-do-people-travel-by-car.pdf>

<sup>32</sup> Car Ownership and Use Exploratory study. (2008) Steer Davies Gleave – in: Why do people travel by car? (2013) TfL  
<https://www.tfl.gov.uk/cdn/static/cms/documents/technical-note-15-why-do-people-travel-by-car.pdf>

# HEALTH IMPACTS OF CAR USE IN LONDON

## How does car use impact the health of car users?

### *Physical inactivity*

In London, 43% of adults do not achieve the minimum level of 150 minutes of physical activity each week that is recommended to stay healthy.<sup>33</sup> Physical activity reduces the risk of premature death and developing chronic diseases including heart disease, cancer, diabetes and stroke.<sup>34</sup>

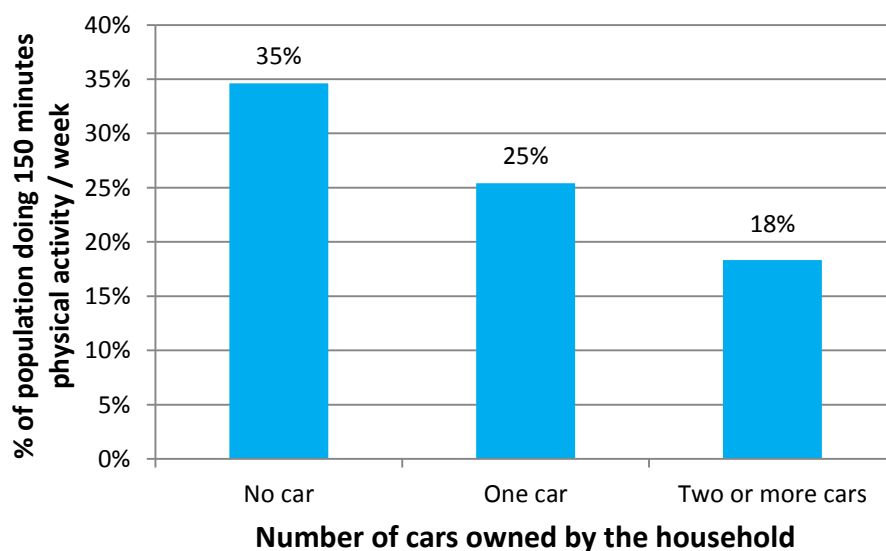
It is widely accepted that the easiest way for most people to stay physically active is by incorporating activity, such as walking or cycling into their daily lives.<sup>34</sup>

A quarter of adults in London achieve the recommended 150 minutes of physical activity each week just through the walking and cycling they do for travel purposes 'active travel'.<sup>35</sup>

Walking is a universal activity in London - there is little difference in walking levels by gender, household income, ethnicity or employment status.<sup>36</sup>

Car ownership is linked to how much walking and cycling Londoners do. This is shown in Figure 7 using data from the London Travel Demand Survey (LTDS). Walking levels decrease significantly as the number of cars a household owns increases.<sup>37</sup>

**Figure 7:** Percentage of the population meeting the 150-minutes per week physical activity requirement through active travel, by household car ownership, 2013/14.<sup>37</sup>



<sup>33</sup> Active People Survey January 2012–January 2013

<sup>34</sup> Start active, stay active: a report on physical activity from the four home countries' Chief Medical Officers (2011) Department of Health

<sup>35</sup> Transport and health in London: The main impacts of London road transport on health (2014) Greater London Authority [http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London\\_March%202014.pdf](http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London_March%202014.pdf)

<sup>36</sup> Travel in London 7 (2014) Transport for London pg. 207-10

<sup>37</sup> Travel in London 7 (2014) Transport for London pg. 209

In London, compared to children living in households with vehicle access, children living in households without access to a vehicle are:

- 2.3 times more likely to walk to school
- 1.4 times more likely to walk outside the school commute on a weekday during term time
- 1.8 times more likely to walk during the summer or weekends.<sup>38</sup>

Public transport is a very important and often overlooked means of increasing physical activity levels. In London half of all walking is carried out as part of trips by public transport.<sup>39</sup>

Walking and cycling are associated with not being overweight or obese:

- Each additional hour spent travelling in a car per day is associated with a 6% increase in the likelihood of becoming obese.
- Each additional kilometre walked per day is associated with a 4.8% reduction in the likelihood of becoming obese.<sup>40</sup>
- Switching from private motor transport to active travel or public transport is associated with a significant reduction in body mass index (BMI).<sup>41</sup>

If Londoners travelled as people do in other cities in England and Wales (by spending a smaller proportion of their travel time walking and more of their travel time in cars/taxis) then Londoners would lose around 17,000 healthy years of life each year to diseases such as heart disease, type 2 diabetes and depression.<sup>42</sup> However, a reduction in car use and increase in walking and cycling in London would deliver significant health benefits to Londoners.<sup>43</sup>

### *What is a healthy year of life?*

One year of life lived in perfect health is equivalent to one Disability Adjusted Life Year (DALY). DALYs are used to measure the number of years of healthy life lost due to early death, illness or disability.

<sup>38</sup> Steinbach R, Green J, Edwards P. Look who's walking: social and environmental correlates of children's walking in London. (2012) *Health & Place* 18(4):917–927.

<sup>39</sup> Improving the health of Londoners. Transport action plan. (2014) Transport for London <http://www.tfl.gov.uk/cdn/static/cms/documents/improving-the-health-of-londoners-transport-action-plan.pdf>

<sup>40</sup> Frank LD, Andresen MA, Schmid TL Obesity relationships with community design, physical activity, and time spent in cars. (2004) *Am J Prev Med* 27(2):87–96.

<sup>41</sup> Martin A, et al. Impact of changes in mode of travel to work on changes in body mass index: evidence from the British Household Panel Survey. (2015) *J Epidemiol Community Health* 0:1–9. doi:10.1136/jech-2014-205211

<sup>42</sup> Transport and health in London: The main impacts of London road transport on health. (2014) Greater London Authority

<sup>43</sup> Transport and health in London: The main impacts of London road transport on health. (2014) Greater London Authority

### *Air pollution*

Overall car drivers are exposed to higher levels of air pollution than cyclists: fine particulate matter (PM<sub>2.5</sub>) and elemental carbon or soot.<sup>44</sup> The level of exposure to air pollution in cars is increased during heavy traffic as a result of the exhaust emissions of surrounding vehicles. Car ventilation systems allow outdoor pollutants to enter the vehicle and pollution inside the vehicle increases as the ventilation rate increases.<sup>45</sup>

Pedestrians and cyclists can reduce their exposure to air pollution by reducing their proximity to motorised traffic and by travelling on streets with lower levels of traffic. The exposure of pedestrians and cyclists to carbon monoxide and fine particulate matter is reduced as wind speed increases.<sup>46</sup>

## **How does car use impact the health of all Londoners?**

### *Road traffic injuries and deaths*

2,324 people were killed or seriously injured (KSI) on London streets in road traffic collisions in 2013.<sup>47</sup> The number of people killed or seriously injured has fallen in the last 10 years; this reduction has largely been among people in cars. In contrast, vulnerable road users (pedestrians, cyclists and motorcyclists) have become more likely to be killed or seriously injured on London streets. Seventy-nine per cent of KSIs were vulnerable road users in 2013 compared to 67% in 2005–2009.<sup>48</sup> Improving the safety of vulnerable road users is a key focus of London's Road Safety Action Plan.<sup>49</sup>

Adult pedestrians aged 25–59 years are the largest group of people killed or seriously injured by road traffic collisions in London because working age adults make up a large proportion of pedestrians.<sup>50</sup>

Fear of road traffic injury is the key reason people give for not cycling<sup>51</sup> and that parents give for limiting their children's independence.<sup>52</sup> Fear of road danger from cars and other motorised vehicles is a key factor in preventing Londoners from being more active.<sup>53</sup>

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<sup>44</sup> De Hartog J, Boogaard H, Nijland H, Hoek G. Do the health benefits of cycling outweigh the risks? (2010) *Environ Health Perspect* 118:1109–16.

<sup>45</sup> Karanasiou A, et al. Assessment of population exposure to air pollution during commuting in European cities ETC/ACM Technical Paper 2013/2. European Topic Centre on Air Pollution and Climate Change Mitigation.

<sup>46</sup> Karanasiou A, et al. Assessment of population exposure to air pollution during commuting in European cities ETC/ACM Technical Paper 2013/2. European Topic Centre on Air Pollution and Climate Change Mitigation.

<sup>47</sup> *Travel in London 7* (2014) Transport for London pg. 165

<sup>48</sup> *Travel in London 7* (2014) Transport for London pg. 165

<sup>49</sup> *Safe Streets for London: The Road Safety Action Plan for London 2020* (2013) Transport for London

<sup>50</sup> *Safe Streets for London: The Road Safety Action Plan for London 2020* (2013) Transport for London pg. 22

<sup>51</sup> *Attitudes towards cycling* (2014) Transport for London <https://www.tfl.gov.uk/cdn/static/cms/documents/attitudes-to-cycling-2014-report.pdf>

<sup>52</sup> Hillman M, Adams J, Whitelegg J. *One false move . . . a study of children's independent mobility*. (1990) London: Policy Studies Institute

<sup>53</sup> *Improving the health of Londoners*. Transport action plan. (2014) Transport for London

<http://www.tfl.gov.uk/cdn/static/cms/documents/improving-the-health-of-londoners-transport-action-plan.pdf>

### Noise

Road traffic noise is a major cause of noise pollution in London.<sup>54</sup>

Noise pollution is associated with impaired intellectual development in children, increased blood pressure, sleep disturbance and reduced wellbeing.<sup>55</sup>

Road traffic noise can also discourage people from walking, cycling and other activities such as shopping and socialising. This has a negative impact on their health by reducing physical activity and social interaction. It also negatively affects local shops, businesses and other services.<sup>56</sup>

### Severance

Increasing car use also increases severance:

- destinations that are geographically close cannot be reached easily on foot due to busy wide roads that may be difficult to cross and perceived to be dangerous.
- people on low incomes, disabled people and carers, and children and young people are disproportionately affected.

Severance has a wide range of effects including:

- restriction on the independence of children and young people
- reduced likelihood of active travel
- reduced social support and social interaction in the street
- stress<sup>57</sup>

### Air pollution

Increasing car usage increases emissions of nitrogen oxide (NOx), CO<sub>2</sub> and particulate matter.

Air pollution has a significant negative impact on the health of all Londoners. The adverse effects range from worsening respiratory symptoms and poorer quality of life, to premature deaths from cardiovascular and respiratory diseases.<sup>58</sup>

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<sup>54</sup> Healthy transport = Healthy lives (2012) British Medical Association pg.25

<sup>55</sup> Health Protection Agency (2010) Environmental Noise and Health in the UK. A report by the Ad Hoc expert Group on Noise and Health. UK: Health Protection Agency.

<sup>56</sup> Improving the health of Londoners. Transport action plan. (2014) Transport for London  
<http://www.tfl.gov.uk/cdn/static/cms/documents/improving-the-health-of-londoners-transport-action-plan.pdf>

<sup>57</sup> Improving the health of Londoners. Transport action plan. (2014) Transport for London  
<http://www.tfl.gov.uk/cdn/static/cms/documents/improving-the-health-of-londoners-transport-action-plan.pdf>

<sup>58</sup> Improving the health of Londoners. Transport action plan. (2014) Transport for London  
<http://www.tfl.gov.uk/cdn/static/cms/documents/improving-the-health-of-londoners-transport-action-plan.pdf>

Air Pollution is a significant health issue in London:

- In 2005 the EU set maximum limits for air pollutants in order to protect human health. Levels of nitrogen dioxide (NO<sub>2</sub>), arising from nitrogen oxide (NO<sub>x</sub>) emissions, still widely exceed the EU limit (set at an annual mean concentration of 40µg/m<sup>3</sup>) on roads in inner and central London. New research has estimated that long-term exposure to NO<sub>2</sub> is responsible for up to 5,900 deaths per year in London.<sup>59</sup>
- An evidence review performed by the World Health Organization (WHO) in 2013<sup>60</sup> found that short- and long-term exposure to NO<sub>2</sub> concentrations at or below the current EU limit values was associated with adverse health effects. Reducing NO<sub>2</sub> levels below the current EU limits would improve the health of Londoners.
- Although the EU legal limits for particulate matter are now largely met in London, it is estimated that long-term exposure to fine particulate matter (PM<sub>2.5</sub>) is responsible for 3,500 deaths per year in London.<sup>61</sup> Since there is no safe level of PM<sub>2.5</sub> further reductions are needed to improve the health and quality of life for Londoners.<sup>62</sup>
- It is estimated that the economic costs of the health impacts of exposure to PM<sub>2.5</sub> and NO<sub>2</sub> in London range from £1.4 billion to £3.7 billion per year.<sup>63</sup>
- Air pollution contributes to widening health inequalities as levels of particulate matter and NO<sub>2</sub> are higher on the most heavily trafficked roads which are used more by disadvantaged people as places where they live, work and shop.<sup>64</sup>

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<sup>59</sup> Walton H et al. Understanding the Health Impacts of Air Pollution in London. (2015) King's College London. [https://www.london.gov.uk/sites/default/files/HIAinLondon\\_KingsReport\\_14072015\\_final\\_0.pdf](https://www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_0.pdf)

<sup>60</sup> Review of evidence on health aspects of air pollution – REVIHAAP Project (2013) WHO <http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2013/review-of-evidence-on-health-aspects-of-air-pollution-revihaap-project-final-technical-report>

<sup>61</sup> Walton H et al. Understanding the Health Impacts of Air Pollution in London. (2015) King's College London. [https://www.london.gov.uk/sites/default/files/HIAinLondon\\_KingsReport\\_14072015\\_final\\_0.pdf](https://www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_0.pdf)

<sup>62</sup> [https://consultations.tfl.gov.uk/environment/ultra-low-emission-zone/user\\_uploads/uhez-supplementary-information--final-291014.pdf-1](https://consultations.tfl.gov.uk/environment/ultra-low-emission-zone/user_uploads/uhez-supplementary-information--final-291014.pdf-1)

<sup>63</sup> Walton H et al. Understanding the Health Impacts of Air Pollution in London. (2015) King's College London. [https://www.london.gov.uk/sites/default/files/HIAinLondon\\_KingsReport\\_14072015\\_final\\_0.pdf](https://www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_0.pdf)

<sup>64</sup> Transport & health: Briefing statement (2013) UK Faculty of Public Health <http://www.fph.org.uk/uploads/briefing%20statement%20transport%20V2.pdf>

### *Climate change*

**“Climate change is the biggest global health threat of the 21st century.”<sup>65</sup>**

The Mayor’s Climate Change Mitigation and Energy strategy (CCMES) sets out London’s target to reduce CO<sub>2</sub> emissions compared to 1990 levels by:

- 60% by 2025 and
- at least 80% by 2050

CO<sub>2</sub> emissions in London have fallen by 11% from 1990 to 2011, however, this reduction is not rapid enough to meet the Mayor’s targets.

21% of London’s CO<sub>2</sub> emissions are generated from London transport.<sup>66</sup>

The Mayor has three policies to reduce CO<sub>2</sub> emissions from transport through:

1. Shifting towards more sustainable forms of travel including walking, cycling and public transport
2. Using existing vehicles and technology more efficiently including reducing engine idling, eco-driving and cutting unnecessary traffic delays
3. Using low carbon vehicles, technologies and fuels, for example, electric vehicles and introducing a 15 year age limit for taxis

### **What would be the health benefits for all Londoners of reducing car use?**

There are many short trips in London that are currently undertaken by motorised modes (predominantly by car) which could reasonably be walked or cycled.

1.6 million car trips per day, made by London residents, could potentially be walked (22% of car trips).<sup>67</sup> Potentially walkable trips are defined as:

- shorter than 2km
- made between 6am and 8pm
- made without a heavy or bulky load
- made by someone aged 5 to 74 without a disability
- trips made by van, dial-a-ride, plane and boat are excluded

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<sup>65</sup> Costello A et al. Lancet and University College London Institute for Global Health Commission. Managing the health effects of climate change. (2009) The Lancet 373: 1693733.

<sup>66</sup> The Mayor’s Climate Change Mitigation and Energy Annual Report. (2014) Greater London Authority [https://www.london.gov.uk/sites/default/files/CCME\\_annual\\_report\\_2014.pdf](https://www.london.gov.uk/sites/default/files/CCME_annual_report_2014.pdf)

<sup>67</sup> Analysis of Walking Potential, London Travel Demand Survey 2005/06 to 2007/08



2.7 million car trips per day, made by London residents, could potentially be cycled (38% of car trips).<sup>68</sup> Potentially cyclable trips are defined as:

- shorter than 8km
- take less than 20% longer by bike
- made between 6am and 8pm
- made without a heavy or bulky load
- made by someone aged 5 to 64 without a disability
- trips made by van, dial-a-ride, plane and boat are excluded

A further study showed that if Londoners swapped motorised trips that could reasonably be walked and cycled, 60% of them would meet the recommended 150 minutes of physical activity through active travel alone. The population of London would gain over 60,000 years of healthy life every year as a result and this would deliver an economic health benefit of over £2 billion annually.<sup>69</sup>

Londoners are also likely to benefit from the following impacts of reducing car use:

- Increased social interaction
- Reduced congestion
- Reduced road traffic injuries
- Reduced noise pollution
- Reduced severance
- Improved air quality
- Mitigation against climate change

For further information on the health impacts of cars:

- visit [www.london.gov.uk/transport-and-health](http://www.london.gov.uk/transport-and-health) or
- contact [Katie.Hunter2@london.gov.uk](mailto:Katie.Hunter2@london.gov.uk) or [Lucy.Saunders@london.gov.uk](mailto:Lucy.Saunders@london.gov.uk)

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<sup>68</sup> Analysis of Cycling Potential (2010) Transport for London

<https://www.tfl.gov.uk/cdn/static/cms/documents/analysis-of-cycling-potential.pdf.pdf>

<sup>69</sup> Transport and health in London: The main impacts of London road transport on health. (2014) Greater London Authority

[http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London\\_March%202014.pdf](http://www.london.gov.uk/sites/default/files/Transport%20and%20health%20in%20London_March%202014.pdf)

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### Hindi

यदि आप इस दस्तावेज की प्रति अपनी  
भाषा में चाहते हैं, तो कृपया निम्नलिखित  
नंबर पर फोन करें अथवा नीचे दिये गये  
पते पर संपर्क करें

### Vietnamese

Nếu bạn muốn có văn bản tài liệu  
này bằng ngôn ngữ của mình, hãy  
liên hệ theo số điện thoại hoặc địa  
chỉ dưới đây.

### Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি  
(কপি) চান, তা হলে नीचेर ফোন নম্বরে  
বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

### Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος  
εγγράφου στη δική σας γλώσσα, παρακαλείστε να  
επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυ-  
δρομικά στην παρακάτω διεύθυνση.

### Urdu

اگر آپ اس دستاویز کی نقل اپنی زبان میں  
چاہتے ہیں، تو براہ کرم نیچے دئے گئے نمبر  
پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

### Turkish

Bu belgenin kendi dilinizde  
hazırlanmış bir nüshasını  
edinmek için, lütfen aşağıdaki  
telefon numarasını arayınız  
veya adrese başvurunuz.

### Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى  
الاتصال برقم الهاتف أو مراسلة العنوان  
أدناه

### Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ  
ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫੋਨ ਕਰੋ ਜਾਂ ਹੇਠ  
ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

### Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં  
જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર  
ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

