



## Comparing smoking prevalence estimates

### Introduction

Smoking prevalence estimates are generated from survey data in which respondents self-report their own smoking status. In the [Local Tobacco Control Profiles](#) there are various smoking prevalence estimates presented which have been derived from data collected from different surveys. This factsheet aims to explain the differences between the survey methodologies and the results obtained from them.

### Overview

Smoking prevalence in adults ranges from 16.9% to 18.8% in England and can be derived from the following surveys:

- Annual Population Survey (APS)
- Quality and Outcomes Framework (QOF)
- GP Patient Survey (GPPS)
- Health Survey for England (HSE)
- Integrated Household Survey (IHS) – no updates from 2014

Smoking prevalence in 15-year-olds (regular smokers) ranges from 4.8% to 8.7% can be derived from the following sources:

- Smoking, Drinking and Drug Use in Young People survey (SDD)
- What About YOUth? survey (WAY)
- Modelled estimates of smoking prevalence in young people (University of Portsmouth and University of Southampton)
- Health Survey for England (HSE)

Each survey has a different methodology and therefore produces different results.

## Smoking prevalence in Adults

### Survey methodologies and limitations

#### Integrated Household Survey (IHS)

As of 2014 the IHS will no longer be updated.

The IHS is an annual composite survey conducted by the Office for National Statistics (ONS), surveying around 340,000 people in the UK per year (200,000 in England). The survey uses an unclustered sample design and questions are asked by interviewers either in a face-to-face or telephone setting. Smoking prevalence is self-reported and therefore subject to the respondent's perception of whether they are a 'smoker'.

For further information see [www.ons.gov.uk/ons/guide-method/method-quality/specific/social-and-welfare-methodology/integrated-household-survey/index.html](http://www.ons.gov.uk/ons/guide-method/method-quality/specific/social-and-welfare-methodology/integrated-household-survey/index.html)

#### Annual Population Survey (APS)

In 2013 several survey modules were removed from the Integrated Household Survey (IHS) to leave a dataset solely based upon the Annual Population Survey (APS). Therefore the ONS announced it would no longer produce the IHS. Instead the questions formerly regarded as the IHS core will continue to be asked in the APS. The APS is designated as a National Statistic and provides a consistent time series of data. Users should therefore replace their previously published historical IHS-based estimates with APS equivalents. Some differences in survey coverage, imputation and weighting methodology may result in some discontinuity for certain 'core' variables compared to estimates previously provided as part of the IHS and as a result the IHS and APS should not be directly compared.

#### Quality and Outcomes Framework (QOF)

The QOF is the annual reward and incentive programme detailing GP practice achievement conducted by the Health and Social Care Information Centre (HSCIC) and although it is voluntary for GP surgeries in the UK, there is a high rate of completion. The Smoking prevalence is derived as a percentage of the estimated patient list size (age 15+) for each GP Practice from the last 24 months and therefore the survey excludes people who are not registered with a GP or have not visited their GP in this period. There may also be some bias as people may not wish to disclose their true smoking status to their GP.

<http://www.hscic.gov.uk/catalogue/PUB18887/qof-1415-annex2-technical-annex.pdf>

#### GP Patient Survey (GPPS)

The GPPS is run by the HSCIC. Patients are selected to be sent a questionnaire using a proportionately stratified unclustered sampling method for each GP practice, however, the initial pool from which the sample is obtained contains only those with a valid NHS number, registered with a GP for six months or more and over the age of 18.

For further information see: [http://gp-survey-production.s3.amazonaws.com/archive/2014/July/1301375001\\_Technical%20Annex%202013-2014\\_FINAL%20v1.pdf](http://gp-survey-production.s3.amazonaws.com/archive/2014/July/1301375001_Technical%20Annex%202013-2014_FINAL%20v1.pdf)

## Health Survey for England (HSE)

The HSE is a home-based survey conducted by interviewers covering around 9,000 adults (aged 16 and over) in private households per year. Households are selected by a stratified random probability sample taken from the Postcode Address File (PAF). Individuals living in institutions are excluded from the sample. Smoking prevalence is reported for national and regional geographies only.

<http://www.hscic.gov.uk/catalogue/PUB19295/HSE2014-Methods-and-docs.pdf>

## Results

Table 1 shows the high level results from initial comparisons between the four surveys. There is significant variation between the data sources even at England level, with the lowest smoking prevalence calculated from the APS and the highest from the HSE.

**Table 1. Smoking prevalence in adults in England and range across English local authorities, by survey**

Survey	Smoking Prevalence	
	England	Range in local authorities in England
APS, 2014 (2015)	17.8% (16.9%)	6.1% - 29.8% (7.5%-32.3%)
IHS, 2014	18.0%	6.1% - 29.8%
QOF, 2014/15	18.6%	11.2% - 27.2%
GPPS, 2013/14	17.1%	9.2% - 29.2%
HSE, 2014	18.8%	-

Looking at the variation between the smoking prevalence from the four surveys in each local authority there are some contrasting results (see appendix A). For example in Ealing the smoking prevalence ranges from 16.2% reported in the QOF, 16.4% reported in the IHS, 16.5% reported in the GPPS and 16.3% in APS for 2014 however in Ashford the range is much larger from 16.5% in the GPPS, 26.4% in the IHS, 18.6% in the QOF and 26.3% in APS for 2014.

Furthermore, if the results from each survey are split into deciles (10 equally sized groups derived from the order in which each local authority ranks in the survey – see appendix A), there is movement for the majority of local authorities between deciles as the different surveys are explored. Although in many cases this may be expected and not cause for concern, just 26 of the 326 local authorities in England were in the same decile in all four surveys, 83 moved between only two neighbouring deciles across the four surveys and 83 moved between three neighbouring deciles. The remaining local authorities had even larger

variation between surveys with Tamworth appearing in decile 1 (9.0%) in the IHS and decile 10 (21.5%) in the GPPS.

## Smoking prevalence in 15-year-olds

### Survey methodologies and limitations

#### Smoking, Drinking and Drug Use in Young People (SDD)

The SDD is a school-based survey conducted by the HSCIC. Young people in secondary schools in England (mainly aged between 11 and 15 years) are asked to complete a survey in exam conditions. Currently due to the small sample size at low level geographies, the HSCIC only publish results at national (England) and regional level.

For further information please see [www.hscic.gov.uk/article/2021/Website-Search?productid=18273&q=smoking+drinking+and+drug+use&sort=Relevance&size=10&page=1&area=both#top](http://www.hscic.gov.uk/article/2021/Website-Search?productid=18273&q=smoking+drinking+and+drug+use&sort=Relevance&size=10&page=1&area=both#top)

#### What About YOUTH? (WAY)

The WAY survey is the first survey to provide local authority estimates for smoking prevalence among 15-year-olds, however there appears to be an underreporting in the data as the survey is completed at home in the majority of cases and it seems that young people feel more able to honestly answer questions on risky behaviours when asked away from the home setting.

For further information please see [www.hscic.gov.uk/article/2021/Website-Search?productid=18373&q=what+about+youth&sort=Relevance&size=10&page=1&area=both#top](http://www.hscic.gov.uk/article/2021/Website-Search?productid=18373&q=what+about+youth&sort=Relevance&size=10&page=1&area=both#top)

#### Modelled estimates

Colleagues at the University of Portsmouth and University of Southampton have used various publicly available data sources such as the Understanding Society Survey and the UK Census, to develop a multilevel logistic model to investigate the simultaneous influence of individual and area characteristics on smoking outcomes. The resultant equations from these models were then used in a predictive framework to estimate likely levels of smoking using population counts from the UK Census and ONS small area population estimates.

#### Health Survey for England (HSE)

Children living in households selected for the HSE adult survey were also interviewed. If there were more than two children living in the household, two were randomly chosen to

complete the survey. This may therefore have omitted some 15-year-olds from the surveyed households. Smoking prevalence is reported for national and regional geographies only. Due to the small sample size of 15-year-olds, three years' worth of data was combined to get the smoking prevalence.

[www.hscic.gov.uk/catalogue/PUB16076/HSE2013-Ch9-chi-smok-exp.pdf](http://www.hscic.gov.uk/catalogue/PUB16076/HSE2013-Ch9-chi-smok-exp.pdf)

## Results

National estimates for 15-year-old regular smokers (defined as smoking at least one cigarette per week) ranged from 5% in the HSE to 8.7% in the modelled estimates (see table 2).

**Table 2. Smoking prevalence in 15-year-olds in England and range across English Local Authorities, by survey**

Survey	Smoking Prevalence	
	England	Range in local authorities in England
SDD	8%	-
WAY	5.5%	1.3% - 11.1%
Modelled estimates	8.7%	3.2% - 14.9%
HSE	5%*	-

The HSCIC are responsible for both the SDD and WAY surveys and suggest using the SDD for national monitoring of smoking prevalence figures and the WAY survey for comparison of local authority level data. The differences in the national estimates have arisen from the different survey methodologies, where it appears young people feel more able to answer questions about their smoking behaviours while completing a school based survey rather than at home.

Although the WAY survey appears to have resulted in an underestimate of the true smoking prevalence, the data is still useful for local authority monitoring of how they compare to other areas of similar demographics and neighbouring areas to them. It will also be useful for monitoring trends following future surveys. The difference between the highest and lowest estimates was around 10%, ranging from 1.3% in Waltham Forest to 11.1% in Blackpool.

The modelled estimates provided the highest estimates for regular smoking prevalence in 15-year-olds, but also have the largest confidence intervals due to the nature of their calculation, and show that all local authority estimates are not significantly different to the England average.

## Appendix A

### Adult smoking prevalence estimates and corresponding deciles

Area name	Current smoking prevalence					QOF 2014/15 decile	IHS 2014 decile	GPPS 2014/15 decile	APS 2014 decile	APS 2015 decile
	QOF 2014/15	IHS 2014	GPPS 2014/15	APS 2014	APS 2015					
Adur	19.1	18.9	17.4	18.4	17.0	7	7	7	6	6
Allerdale	17.9	18.4	18.5	17.9	17.2	6	6	8	6	6
Amber Valley	16.7	18.8	16.5	17.1	18.4	4	7	5	5	7
Arun	18.3	16.2	15.6	15.8	12.3	6	4	4	4	2
Ashfield	21.8	20.1	17.0	19.7	17.4	9	8	6	8	6
Ashford	18.6	26.4	16.5	26.3	14.5	6	10	5	10	4
Aylesbury Vale	16.0	17.3	14.5	16.3	11.5	3	5	3	5	1
Babergh	15.3	16.0	11.4	15.5	17.3	3	4	1	4	6
Barking and Dagenham	20.8	21.7	19.4	23.1	18.4	8	9	9	10	7
Barnet	15.1	13.2	15.8	14.0	14.6	3	2	5	3	4
Barnsley	22.0	22.3	19.2	22.5	21.2	9	9	8	9	9
Barrow-in-Furness	21.0	23.5	19.4	24.0	20.2	9	10	9	10	9
Basildon	20.0	18.5	17.1	17.9	17.8	8	6	6	6	7
Basingstoke and Deane	17.4	18.6	14.8	16.1	20.2	5	6	4	5	9
Bassetlaw	19.6	16.2	19.4	16.3	23.5	7	4	9	5	10
Bath and North East Somerset	14.7	15.6	14.4	16.1	13.7	2	4	3	5	3
Bedford	18.3	14.2	16.0	13.5	17.2	6	3	5	2	6
Bexley	16.9	16.6	15.3	14.8	14.1	4	5	4	3	3
Birmingham	19.8	18.4	17.4	17.9	15.9	7	6	6	6	5
Blaby	15.2	15.8	13.4	16.0	15.5	3	4	2	5	4
Blackburn with Darwen	22.5	23.6	20.1	23.7	21.3	10	10	9	10	9
Blackpool	27.1	26.9	28.0	26.8	25.3	10	10	10	10	10
Bolsover	21.0	23.4	18.8	25.5	19.6	9	10	8	10	8
Bolton	21.1	20.9	20.4	21.6	18.5	9	8	9	9	7
Boston	24.6	18.6	19.7	17.6	23.3	10	6	9	6	10
Bournemouth	21.0	17.9	20.3	17.6	18.8	9	6	9	6	8
Bracknell Forest	17.0	16.9	16.3	16.8	16.7	4	5	5	5	6
Bradford	22.2	20.2	20.1	20.3	20.9	9	8	9	8	9
Braintree	18.3	13.0	15.2	13.6	20.2	6	2	4	2	9
Breckland	19.6	18.4	16.7	18.8	15.8	7	6	6	7	5
Brent	17.6	13.6	17.3	16.2	12.2	5	2	6	5	2
Brentwood	13.7	12.6	14.3	13.3	16.1	1	2	3	2	5
Brighton and Hove	22.8	23.1	20.4	24.4	20.9	10	10	9	10	9
Bristol	21.7	18.9	20.7	20.5	18.1	9	7	10	8	7
Broadland	15.4	13.5	13.5	13.7	12.8	3	2	2	3	3
Bromley	15.9	14.0	13.0	12.7	14.2	3	3	2	2	4

Bromsgrove	14.4	12.1	12.7	11.6	13.7	2	1	1	1	3
Broxbourne	18.3	19.1	17.7	17.9	16.2	6	7	7	6	5
Broxtowe	17.2	14.5	16.0	14.9	12.1	5	3	5	3	2
Burnley	24.5	27.9	20.4	27.7	21.6	10	10	9	10	10
Bury	19.0	20.5	17.5	19.0	19.5	7	8	7	7	8
Calderdale	21.1	20.2	16.8	19.9	18.7	9	8	6	8	8
Cambridge	14.7	17.6	15.3	16.5	17.7	2	6	4	5	6
Camden	17.9	16.9	19.4	15.9	15.9	6	5	9	4	5
Cannock Chase	20.1	18.3	17.5	19.5	18.9	8	6	7	8	8
Canterbury	17.7	20.0	16.5	20.4	15.3	5	8	5	8	4
Carlisle	20.6	22.2	17.7	20.9	13.9	8	9	7	8	3
Castle Point	18.3	26.9	17.3	26.1	19.2	6	10	6	10	8
Central Bedfordshire	17.2	17.5	14.3	18.5	16.6	5	5	3	7	6
Charnwood	15.8	18.4	13.5	17.5	18.0	3	6	2	6	7
Chelmsford	15.0	14.3	12.6	13.7	10.7	2	3	1	3	1
Cheltenham	16.2	14.7	14.4	14.9	11.2	4	3	3	3	1
Cherwell	17.6	13.6	16.9	13.2	20.5	5	2	6	2	9
Cheshire East	15.8	12.6	14.0	11.5	12.5	3	2	3	1	2
Cheshire West and Chester	16.4	20.1	16.0	19.4	13.1	4	8	5	7	3
Chesterfield	19.9	26.4	18.3	26.1	18.3	7	10	8	10	7
Chichester	15.9	16.0	14.5	15.4	11.7	3	4	3	4	2
Chiltern	12.5	7.3	11.2	8.0	8.8	1	1	1	1	1
Chorley	18.0	17.9	15.5	16.7	19.2	6	6	4	5	8
Christchurch	14.4	15.8	14.2	17.1	16.6	2	4	3	5	5
City of London	11.2	13.3	15.4	-	-	1	2	4	1	1
Colchester	18.1	21.0	17.4	21.0	19.8	6	9	7	9	9
Copeland	19.5	28.7	18.0	26.2	19.7	7	10	7	10	9
Corby	27.2	29.8	29.2	29.8	32.3	10	10	10	10	10
Cornwall	19.0	19.3	18.1	18.4	18.2	7	7	7	6	7
Cotswold	14.2	15.6	13.0	15.1	14.2	2	4	2	4	4
County Durham	19.3	20.6	17.4	20.3	19.0	7	8	7	8	8
Coventry	19.3	15.6	20.6	15.8	16.6	7	4	10	4	6
Craven	14.4	14.0	14.8	13.4	14.8	2	3	4	2	4
Crawley	19.6	17.4	19.9	17.9	21.6	7	5	9	6	10
Croydon	17.9	17.1	17.3	17.7	17.9	6	5	6	6	7
Dacorum	16.5	14.0	16.8	13.9	19.0	4	3	6	3	8
Darlington	20.6	20.1	20.1	19.2	17.9	8	8	9	7	7
Dartford	18.7	17.1	18.5	17.5	19.0	6	5	8	6	8
Daventry	16.4	14.2	13.0	11.8	13.5	4	3	2	1	3
Derby	20.7	18.7	16.7	17.6	18.7	8	7	6	6	8
Derbyshire Dales	13.2	12.9	11.5	12.1	12.2	1	2	1	2	2
Doncaster	22.9	22.7	19.6	21.5	19.6	10	9	9	9	8
Dover	21.2	18.6	18.4	20.5	29.7	9	6	8	8	10
Dudley	18.6	19.5	18.4	18.4	18.5	6	7	8	6	7
Ealing	16.2	16.4	16.5	16.3	15.2	4	5	5	5	4

East Cambridgeshire	16.8	14.9	13.9	16.2	14.4	4	3	3	5	4
East Devon	14.3	11.2	13.4	11.1	9.1	2	1	2	1	1
East Dorset	11.7	12.0	9.9	11.7	11.2	1	1	1	1	1
East Hampshire	14.5	18.5	11.8	17.5	12.7	2	6	1	6	2
East Hertfordshire	13.9	17.0	11.7	17.5	16.2	1	5	1	6	5
East Lindsey	20.1	21.0	19.5	19.7	20.5	8	9	9	8	9
East Northamptonshire	18.3	19.9	16.8	18.3	21.7	6	7	6	6	10
East Riding of Yorkshire	15.8	14.2	13.1	15.1	15.7	3	3	2	4	5
East Staffordshire	18.8	16.3	18.1	15.5	14.1	7	5	8	4	3
Eastbourne	18.5	17.4	18.3	18.4	18.8	6	5	8	6	8
Eastleigh	15.0	15.8	13.9	13.7	16.5	2	4	3	3	5
Eden	15.8	11.3	12.0	11.6	14.7	3	1	1	1	4
Elmbridge	12.5	17.1	10.7	16.5	12.9	1	5	1	5	3
Enfield	19.1	13.6	18.1	15.0	16.8	7	2	8	4	6
Epping Forest	17.1	20.2	14.5	19.9	22.1	5	8	3	8	10
Epsom and Ewell	13.1	12.2	12.3	14.3	13.8	1	2	1	3	3
Erewash	18.9	21.9	15.0	22.5	20.4	7	9	4	9	9
Exeter	17.6	16.1	18.1	15.9	14.2	5	4	8	4	4
Fareham	13.3	9.8	12.4	10.2	7.7	1	1	1	1	1
Fenland	23.2	21.2	18.3	21.7	26.4	10	9	8	9	10
Forest Heath	20.6	27.6	16.2	24.5	18.8	8	10	5	10	8
Forest of Dean	17.0	20.8	17.0	20.6	20.3	5	8	6	8	9
Fylde	16.8	17.2	14.5	17.6	16.6	4	5	3	6	6
Gateshead	20.7	21.0	19.2	19.9	18.3	8	8	8	8	7
Gedling	17.9	18.1	16.1	19.0	17.4	6	6	5	7	6
Gloucester	20.0	22.1	17.8	23.1	18.7	8	9	7	10	7
Gosport	20.9	11.3	19.6	13.5	15.8	8	1	9	2	5
Gravesham	18.8	21.7	16.9	20.3	16.5	6	9	6	8	5
Great Yarmouth	24.0	19.1	22.0	19.2	24.1	10	7	10	7	10
Greenwich	19.9	17.3	17.0	18.1	14.2	7	5	6	6	4
Guildford	13.6	18.6	14.9	19.4	14.0	1	6	4	7	3
Hackney	22.7	20.0	21.9	20.1	20.5	10	8	10	8	9
Halton	21.7	17.8	18.3	16.4	20.1	9	6	8	5	9
Hambleton	13.3	12.1	12.1	15.5	17.3	1	1	1	4	6
Hammersmith and Fulham	19.9	22.2	21.7	22.9	18.7	8	9	10	9	8
Harborough	13.6	15.6	13.8	14.7	10.5	1	4	2	3	1
Haringey	21.0	20.7	21.6	20.5	22.0	9	8	10	8	10
Harlow	23.2	23.8	21.3	26.3	22.9	10	10	10	10	10
Harrogate	15.1	12.2	15.0	11.2	10.2	2	2	4	1	1
Harrow	13.4	13.1	11.9	11.9	13.2	1	2	1	2	3
Hart	12.6	6.4	9.9	6.7	16.9	1	1	1	1	6
Hartlepool	23.1	23.4	22.4	23.6	22.8	10	10	10	10	10
Hastings	25.9	22.6	23.7	22.0	25.6	10	9	10	9	10
Havant	19.5	17.7	16.0	15.8	18.1	7	6	5	4	7
Havering	16.8	18.4	17.4	19.8	17.3	4	6	6	8	6



Herefordshire	17.8	14.4	16.8	14.6	17.5	5	3	6	3	6
Hertsmere	16.0	23.1	14.3	21.5	16.0	3	10	3	9	5
High Peak	17.8	15.3	18.6	15.4	17.2	5	4	8	4	6
Hillingdon	17.0	17.1	16.0	17.5	16.9	5	5	5	6	6
Hinckley and Bosworth	17.4	17.6	14.1	18.0	23.5	5	5	3	6	10
Horsham	13.2	16.1	12.9	15.3	12.9	1	4	2	4	3
Hounslow	16.8	12.3	17.1	14.4	14.1	4	2	6	3	3
Huntingdonshire	17.1	14.4	15.6	15.2	13.9	5	3	4	4	3
Hyndburn	23.6	22.4	20.5	22.7	17.7	10	9	9	9	6
Ipswich	21.3	25.3	19.7	24.6	18.3	9	10	9	10	7
Isle of Wight	19.2	16.2	17.5	16.8	16.4	7	4	7	5	5
Islington	21.4	22.2	21.8	21.0	17.6	9	9	10	9	6
Kensington and Chelsea	19.0	18.7	20.6	20.3	18.8	7	6	10	8	8
Kettering	20.7	15.7	17.6	14.2	19.0	8	4	7	3	8
King's Lynn and West Norfolk	20.5	16.7	16.6	16.2	17.5	8	5	6	5	6
Kingston upon Hull	26.1	26.4	24.5	25.8	26.8	10	10	10	10	10
Kingston upon Thames	16.1	13.5	14.0	12.4	16.2	3	2	3	2	5
Kirklees	20.4	21.2	18.1	20.6	16.4	8	9	7	8	5
Knowsley	24.2	21.7	19.6	21.7	21.4	10	9	9	9	9
Lambeth	20.6	18.1	20.6	19.0	21.2	8	6	10	7	9
Lancaster	19.4	18.8	15.9	19.4	19.4	7	7	5	7	8
Leeds	20.8	23.1	19.4	22.2	18.5	8	10	9	9	7
Leicester	19.6	20.7	19.5	19.2	20.0	7	8	9	7	9
Lewes	17.1	19.7	15.0	17.8	17.7	5	7	4	6	7
Lewisham	20.5	20.6	18.2	21.1	16.6	8	8	8	9	6
Lichfield	15.6	13.4	11.9	13.6	16.0	3	2	1	3	5
Lincoln	23.8	18.5	18.4	17.8	19.8	10	6	8	6	9
Liverpool	22.9	21.7	21.3	22.8	23.1	10	9	10	9	10
Luton	20.0	20.0	19.8	21.3	15.8	8	8	9	9	5
Maidstone	17.3	17.3	15.5	17.1	13.2	5	5	4	5	3
Maldon	16.9	24.1	14.0	26.3	18.1	4	10	3	10	7
Malvern Hills	15.2	13.8	12.9	14.0	9.5	3	2	2	3	1
Manchester	23.2	25.8	22.6	25.5	22.7	10	10	10	10	10
Mansfield	23.2	19.9	20.3	18.8	15.6	10	7	9	7	5
Medway	21.1	22.7	18.0	22.2	22.3	9	9	7	9	10
Melton	17.3	19.7	16.0	19.5	14.2	5	7	5	7	4
Mendip	18.1	15.1	17.7	16.5	19.6	6	4	7	5	9
Merton	16.7	15.5	18.1	12.8	14.7	4	4	7	2	4
Mid Devon	16.5	12.7	13.7	12.9	10.0	4	2	2	2	1
Mid Suffolk	14.3	13.0	12.9	13.9	11.6	2	2	2	3	2
Mid Sussex	13.3	15.8	10.9	14.9	14.5	1	4	1	4	4
Middlesbrough	23.8	20.2	22.4	21.2	20.8	10	8	10	9	9
Milton Keynes	18.7	19.1	16.6	19.4	16.4	6	7	6	7	5
Mole Valley	13.2	14.4	13.8	17.0	13.3	1	3	2	5	3
New Forest	14.8	12.5	14.4	12.0	11.8	2	2	3	2	2

Newark and Sherwood	18.3	22.6	15.6	20.9	17.1	6	9	4	9	6
Newcastle upon Tyne	20.5	19.6	20.7	19.8	18.6	8	7	10	8	7
Newcastle-under-Lyme	18.5	14.9	17.2	15.6	13.1	6	3	6	4	3
Newham	18.7	20.6	18.2	20.9	20.0	6	8	8	9	9
North Devon	17.3	19.4	16.3	19.9	14.6	5	7	5	8	4
North Dorset	16.0	21.0	13.0	19.3	18.8	3	8	2	7	8
North East Derbyshire	15.6	16.3	16.4	14.6	20.9	3	4	5	3	9
North East Lincolnshire	24.5	23.3	22.4	23.8	22.8	10	10	10	10	10
North Hertfordshire	15.0	19.3	13.7	16.6	14.2	2	7	2	5	4
North Kesteven	15.3	13.9	13.6	12.7	11.7	3	3	2	2	2
North Lincolnshire	21.0	17.9	17.5	18.9	21.0	9	6	7	7	9
North Norfolk	17.1	14.3	13.6	14.1	12.3	5	3	2	3	2
North Somerset	17.2	12.4	16.4	12.3	11.6	5	2	5	2	2
North Tyneside	18.8	18.6	17.2	19.3	18.0	6	6	6	7	7
North Warwickshire	17.8	14.6	17.6	15.3	10.8	6	3	7	4	1
North West Leicestershire	17.4	16.9	17.9	17.4	22.1	5	5	7	6	10
Northampton	22.3	25.0	19.3	24.4	18.8	9	10	8	10	8
Northumberland	16.8	16.5	14.8	16.6	16.6	4	5	4	5	6
Norwich	21.8	23.8	20.7	25.3	18.9	9	10	10	10	8
Nottingham	22.6	24.2	23.0	25.0	24.0	10	10	10	10	10
Nuneaton and Bedworth	19.8	21.8	16.7	20.6	15.9	7	9	6	8	5
Oadby and Wigston	14.4	14.1	16.5	12.0	13.0	2	3	5	2	3
Oldham	22.3	20.1	19.2	19.3	22.2	9	8	8	7	10
Oxford	15.0	14.0	17.1	13.4	13.7	2	3	6	2	3
Pendle	22.9	21.0	22.6	20.5	20.9	10	9	10	8	9
Peterborough	25.0	18.6	21.9	17.6	18.1	10	6	10	6	7
Plymouth	21.0	22.4	20.0	22.3	20.6	9	9	9	9	9
Poole	17.2	15.5	16.5	15.9	16.3	5	4	5	4	5
Portsmouth	22.4	21.7	21.4	21.5	19.8	10	9	10	9	9
Preston	23.5	25.3	18.8	26.7	19.2	10	10	8	10	8
Purbeck	16.2	16.5	12.2	17.0	10.6	4	5	1	5	1
Reading	17.7	17.0	17.9	18.7	17.6	5	5	7	7	6
Redbridge	14.1	14.2	15.6	13.8	11.5	1	3	4	3	2
Redcar and Cleveland	20.4	18.9	18.4	18.7	17.3	8	7	8	7	6
Redditch	20.6	17.8	19.1	17.6	21.5	8	6	8	6	10
Reigate and Banstead	14.7	13.4	13.3	12.8	15.2	2	2	2	2	4
Ribble Valley	13.9	12.5	14.1	11.9	10.8	1	2	3	2	1
Richmond upon Thames	13.6	11.2	13.5	12.7	11.8	1	1	2	2	2
Richmondshire	15.7	25.0	14.1	24.1	10.6	3	10	3	10	1
Rochdale	22.9	21.1	20.7	22.5	22.0	10	9	10	9	10
Rochford	14.9	12.5	13.9	13.0	12.5	2	2	2	2	2
Rossendale	21.5	23.8	17.0	24.0	21.8	9	10	6	10	10
Rother	16.7	14.1	17.8	14.5	15.7	4	3	7	3	5
Rotherham	21.2	18.4	18.3	19.4	18.1	9	6	8	7	7
Rugby	19.2	13.9	17.5	14.5	11.9	7	2	7	3	2

Runnymede	16.3	14.7	14.9	15.3	11.1	4	3	4	4	1
Rushcliffe	12.3	10.2	12.2	10.1	7.5	1	1	1	1	1
Rushmoor	19.5	16.8	14.7	16.5	24.0	7	5	4	5	10
Rutland	13.6	14.1	11.3	13.6	11.6	1	3	1	3	2
Ryedale	15.0	10.9	13.3	11.8	12.6	2	1	2	2	2
Salford	23.6	24.4	20.6	24.5	22.3	10	10	10	10	10
Sandwell	21.5	20.6	20.4	20.4	17.7	9	8	9	8	6
Scarborough	19.5	19.2	17.9	19.5	12.9	7	7	7	7	3
Sedgemoor	19.9	19.5	15.9	19.3	13.9	7	7	5	7	3
Sefton	18.0	15.9	15.5	15.8	14.3	6	4	4	4	4
Selby	16.5	19.8	14.3	19.2	15.9	4	7	3	7	5
Sevenoaks	14.8	6.1	13.4	6.5	15.6	2	1	2	1	5
Sheffield	18.1	17.7	17.9	17.2	18.3	6	6	7	5	7
Shepway	20.6	23.8	20.6	24.0	15.7	8	10	10	10	5
Shropshire	15.9	15.3	14.3	15.1	14.6	3	4	3	4	4
Slough	18.7	19.0	18.9	19.4	18.2	6	7	8	7	7
Solihull	16.3	12.6	13.8	12.2	11.6	4	2	2	2	2
South Bucks	15.1	16.1	14.9	13.7	9.2	3	4	4	3	1
South Cambridgeshire	12.7	11.7	12.1	11.6	12.8	1	1	1	1	3
South Derbyshire	16.4	23.5	18.0	21.6	13.9	4	10	7	9	3
South Gloucestershire	16.0	13.9	13.3	13.8	12.3	3	3	2	3	2
South Hams	14.3	14.8	13.2	12.4	13.0	2	3	2	2	3
South Holland	21.4	22.7	16.0	24.0	16.7	9	9	5	10	6
South Kesteven	16.4	14.8	16.4	12.7	12.3	4	3	5	2	2
South Lakeland	13.8	12.1	11.5	11.5	10.5	1	1	1	1	1
South Norfolk	14.5	10.9	12.4	10.5	10.2	2	1	1	1	1
South Northamptonshire	14.4	9.5	13.9	10.4	12.2	2	1	3	1	2
South Oxfordshire	14.2	12.5	12.7	13.5	9.5	1	2	2	2	1
South Ribble	16.9	15.5	15.7	15.3	16.1	4	4	5	4	5
South Somerset	17.6	20.4	14.6	19.8	17.2	5	8	4	8	6
South Staffordshire	14.5	9.7	11.3	6.9	9.0	2	1	1	1	1
South Tyneside	21.9	19.5	19.6	19.5	17.4	9	7	9	7	6
Southampton	22.3	20.5	22.1	20.4	20.5	9	8	10	8	9
Southend-on-Sea	20.9	20.1	18.6	19.4	18.8	8	8	8	7	8
Southwark	19.3	16.5	18.8	16.8	15.9	7	5	8	5	5
Spelthorne	17.4	15.9	14.2	17.2	15.2	5	4	3	5	4
St Albans	12.2	9.9	9.9	8.8	8.6	1	1	1	1	1
St Edmundsbury	17.7	20.5	17.3	19.6	15.9	5	8	6	8	5
St Helens	19.7	19.4	19.5	18.3	20.3	7	7	9	6	9
Stafford	15.5	12.9	17.8	13.5	12.3	3	2	7	2	2
Staffordshire Moorlands	16.0	14.3	12.4	13.7	14.1	3	3	1	3	3
Stevenage	19.1	23.4	18.6	23.1	21.6	7	10	8	10	10
Stockport	17.8	17.1	15.5	15.9	15.1	6	5	4	4	4
Stockton-on-Tees	18.9	19.2	16.7	19.6	18.4	7	7	6	8	7
Stoke-on-Trent	23.6	18.7	19.6	18.0	18.8	10	7	9	6	8

Stratford-on-Avon	14.3	12.3	13.2	11.5	11.9	2	2	2	1	2
Stroud	15.2	10.5	14.1	10.0	10.4	3	1	3	1	1
Suffolk Coastal	15.3	20.3	14.6	20.1	13.5	3	8	4	8	3
Sunderland	22.5	22.8	21.1	22.1	21.5	10	9	10	9	10
Surrey Heath	14.3	10.6	12.8	10.7	12.7	2	1	2	1	2
Sutton	17.3	15.3	17.7	14.8	14.5	5	4	7	3	4
Swale	21.7	19.7	17.9	19.1	18.2	9	7	7	7	7
Swindon	19.3	17.8	15.8	18.0	18.7	7	6	5	6	8
Tameside	23.0	22.5	19.7	22.8	21.7	10	9	9	9	10
Tamworth	20.2	9.0	21.5	8.5	12.3	8	1	10	1	2
Tandridge	15.1	10.0	15.7	9.1	17.9	2	1	4	1	7
Taunton Deane	17.9	16.5	16.0	15.2	14.2	6	5	5	4	4
Teignbridge	16.6	10.6	13.9	9.3	12.5	4	1	3	1	2
Telford and Wrekin	20.8	20.7	18.0	20.0	18.2	8	8	7	8	7
Tendring	21.2	22.5	20.1	23.0	19.3	9	9	9	10	8
Test Valley	16.7	10.1	15.1	10.4	10.2	4	1	4	1	1
Tewkesbury	15.6	14.4	14.2	12.7	14.8	3	3	3	2	4
Thanet	23.7	23.8	21.0	21.5	19.2	10	10	10	9	8
Three Rivers	16.0	12.1	15.5	12.7	13.8	3	1	4	2	3
Thurrock	20.3	20.7	17.7	20.9	21.3	8	8	7	8	9
Tonbridge and Malling	16.0	17.0	16.3	15.6	14.1	3	5	5	4	3
Torbay	20.6	19.9	15.0	20.9	17.0	8	7	4	8	6
Torridge	17.4	14.0	14.8	14.3	12.5	5	3	4	3	2
Tower Hamlets	21.7	22.1	21.4	22.7	20.0	9	9	10	9	9
Trafford	16.7	15.5	16.4	15.8	16.4	4	4	5	4	5
Tunbridge Wells	16.3	17.9	16.8	16.3	15.3	4	6	6	5	4
Uttlesford	13.8	6.6	10.8	6.1	10.7	1	1	1	1	1
Vale of White Horse	15.0	15.8	11.9	14.8	18.1	2	4	1	3	7
Wakefield	22.0	23.4	19.6	22.4	21.9	9	10	9	9	10
Walsall	21.6	18.7	18.7	19.1	17.6	9	7	8	7	6
Waltham Forest	20.5	20.7	19.3	21.6	17.6	8	8	8	9	6
Wandsworth	17.0	14.4	17.3	14.7	13.7	5	3	6	3	3
Warrington	17.0	15.5	15.1	14.5	14.8	5	4	4	3	4
Warwick	15.2	13.7	15.5	14.6	9.8	3	2	4	3	1
Watford	17.9	22.0	14.7	19.3	12.5	6	9	4	7	2
Waveney	20.0	19.9	17.2	18.5	18.7	8	7	6	7	8
Waverley	12.6	17.2	11.2	16.7	11.7	1	5	1	5	2
Wealden	14.9	15.2	14.4	15.6	14.3	2	4	3	4	4
Wellingborough	22.9	16.3	18.1	15.9	18.3	10	4	7	4	7
Welwyn Hatfield	16.7	22.4	14.3	18.9	19.1	4	9	3	7	8
West Berkshire	15.7	15.5	17.0	15.6	14.1	3	4	6	4	3
West Devon	14.6	12.8	14.4	10.0	12.3	2	2	3	1	2
West Dorset	14.1	13.9	13.9	14.7	14.9	1	3	3	3	4
West Lancashire	16.4	13.7	17.1	13.1	19.1	4	2	6	2	8
West Lindsey	16.4	13.9	16.5	12.0	18.9	4	3	5	2	8

West Oxfordshire	14.8	12.1	12.7	12.2	16.6	2	1	2	2	5
West Somerset	17.0	13.2	16.5	11.5	12.6	5	2	5	1	2
Westminster	17.3	20.0	18.4	17.6	15.0	5	7	8	6	4
Weymouth and Portland	20.7	17.9	20.9	18.2	19.8	8	6	10	6	9
Wigan	20.0	20.6	18.3	20.7	18.7	8	8	8	8	7
Wiltshire	16.5	17.6	15.1	17.7	14.3	4	6	4	6	4
Winchester	12.6	8.2	11.3	8.5	11.2	1	1	1	1	1
Windsor and Maidenhead	14.3	12.1	13.4	12.1	13.0	2	1	2	2	3
Wirral	19.2	17.6	17.3	17.2	18.9	7	6	6	5	8
Woking	13.9	11.1	14.1	10.5	16.2	1	1	3	1	5
Wokingham	12.3	9.8	12.6	9.5	9.5	1	1	1	1	1
Wolverhampton	20.9	20.4	18.1	20.9	19.3	9	8	8	9	8
Worcester	19.8	22.0	20.0	23.8	22.4	7	9	9	10	10
Worthing	18.5	20.3	15.8	21.9	15.8	6	8	5	9	5
Wychavon	16.5	16.3	14.3	15.4	10.2	4	5	3	4	1
Wycombe	15.1	16.5	13.4	15.4	12.6	2	5	2	4	2
Wyre	18.4	17.1	16.4	15.5	14.2	6	5	5	4	4
Wyre Forest	19.9	19.4	17.8	17.3	18.2	8	7	7	5	7
York	15.2	18.4	12.9	17.2	14.6	3	6	2	5	4

## Appendix B

### Smoking prevalence in 15-year-olds estimates

Area code	Area name	Current smoking prevalence		
		WAY	modelled	difference
E09000002	Barking and Dagenham	3.6	6.4	2.8
E09000003	Barnet	2.6	5.5	2.9
E08000016	Barnsley	7.5	10.9	3.4
E06000022	Bath and North East Somerset	6.6	9.7	3.1
E06000055	Bedford	5.7	7.3	1.6
E09000004	Bexley	4.9	6.7	1.8
E08000025	Birmingham	3.1	6.3	3.1
E06000008	Blackburn with Darwen	6.6	6.9	0.4
E06000009	Blackpool	11.1	11.6	0.5
E08000001	Bolton	6.9	8.1	1.2
E06000028	Bournemouth	7.0	10.6	3.6
E06000036	Bracknell Forest	4.4	8.6	4.2
E08000032	Bradford	6.5	6.6	0.1
E09000005	Brent	2.4	4.0	1.6
E06000043	Brighton and Hove	9.7	10.6	0.9
E06000023	Bristol	7.8	9.7	2.0
E09000006	Bromley	6.6	7.2	0.6
E10000002	Buckinghamshire	2.9	7.6	4.7
E08000002	Bury	4.7	8.4	3.7
E08000033	Calderdale	7.4	9.2	1.8
E10000003	Cambridgeshire	5.2	9.4	4.2
E09000007	Camden	3.9	9.0	5.1
E06000056	Central Bedfordshire	5.1	8.7	3.5
E06000049	Cheshire East	4.5	9.0	4.5
E06000050	Cheshire West and Chester	5.1	9.8	4.7
E06000052	Cornwall	6.9	10.1	3.2
E06000047	County Durham	8.6	10.9	2.3
E08000026	Coventry	5.8	7.0	1.2
E09000008	Croydon	3.9	4.8	0.9
E10000006	Cumbria	5.1	9.9	4.8
E06000005	Darlington	6.8	10.6	3.7
E06000015	Derby	5.1	8.3	3.2
E10000007	Derbyshire	5.4	9.8	4.4
E10000008	Devon	6.2	9.8	3.7
E08000017	Doncaster	6.8	10.1	3.3
E10000009	Dorset	5.8	9.8	4.0
E08000027	Dudley	4.9	8.6	3.7
E09000009	Ealing	2.7	4.9	2.2
E06000011	East Riding of Yorkshire	5.2	9.3	4.0
E10000011	East Sussex	7.3	9.7	2.4
E09000010	Enfield	2.0	5.3	3.3
E10000012	Essex	6.1	9.0	2.9
E08000037	Gateshead	9.8	11.7	1.9
E10000013	Gloucestershire	5.0	9.4	4.5
E09000011	Greenwich	3.0	7.2	4.2
E09000012	Hackney	2.6	7.7	5.1
E06000006	Halton	6.5	11.4	4.8

Area code	Area name	Current smoking prevalence		
		WAY	modelled	difference
E09000013	Hammersmith and Fulham	3.6	9.0	5.4
E10000014	Hampshire	4.9	9.2	4.3
E09000014	Haringey	3.5	7.1	3.6
E09000015	Harrow	2.2	3.2	1.0
E06000001	Hartlepool	7.7	12.0	4.3
E09000016	Havering	3.5	7.5	4.0
E06000019	Herefordshire	3.7	10.2	6.5
E10000015	Hertfordshire	4.5	8.3	3.8
E09000017	Hillingdon	5.3	5.0	-0.3
E09000018	Hounslow	4.0	5.2	1.2
E06000046	Isle of Wight	6.9	9.8	2.9
E09000019	Islington	4.5	10.1	5.5
E09000020	Kensington and Chelsea	3.3	9.0	5.7
E10000016	Kent	7.3	9.5	2.1
E06000010	Kingston upon Hull	6.6	12.7	6.1
E09000021	Kingston upon Thames	4.5	6.4	1.9
E08000034	Kirklees	5.5	7.4	1.9
E08000011	Knowsley	5.8	11.6	5.8
E09000022	Lambeth	1.6	7.4	5.8
E10000017	Lancashire	5.7	9.0	3.3
E08000035	Leeds	8.3	9.6	1.3
E06000016	Leicester	3.5	6.1	2.6
E10000018	Leicestershire	4.5	8.1	3.7
E09000023	Lewisham	3.9	5.9	2.0
E10000019	Lincolnshire	5.6	9.9	4.3
E08000012	Liverpool	3.9	12.1	8.2
E06000032	Luton	3.7	5.0	1.3
E08000003	Manchester	5.6	9.2	3.6
E06000035	Medway	6.6	8.4	1.8
E09000024	Merton	3.8	5.7	2.0
E06000002	Middlesbrough	6.5	10.4	3.8
E06000042	Milton Keynes	6.7	8.0	1.2
E08000021	Newcastle upon Tyne	8.3	11.2	2.9
E09000025	Newham	2.4	4.0	1.6
E10000020	Norfolk	7.9	10.1	2.3
E06000012	North East Lincolnshire	7.7	10.9	3.2
E06000013	North Lincolnshire	6.3	9.7	3.4
E06000024	North Somerset	5.1	9.4	4.3
E08000022	North Tyneside	7.5	10.5	3.1
E10000023	North Yorkshire	3.2	9.9	6.7
E10000021	Northamptonshire	6.2	9.0	2.8
E06000057	Northumberland	6.0	10.7	4.7
E06000018	Nottingham	6.7	8.6	1.9
E10000024	Nottinghamshire	5.3	9.4	4.1
E08000004	Oldham	4.9	8.4	3.4
E10000025	Oxfordshire	5.7	9.1	3.4
E06000031	Peterborough	6.6	8.8	2.2
E06000026	Plymouth	6.0	11.5	5.4
E06000029	Poole	7.4	9.4	2.1
E06000044	Portsmouth	8.2	10.3	2.2
E06000038	Reading	6.1	7.6	1.5

Area code	Area name	Current smoking prevalence		
		WAY	modelled	difference
E09000026	Redbridge	1.6	3.7	2.1
E06000003	Redcar and Cleveland	6.0	11.1	5.0
E09000027	Richmond upon Thames	6.7	8.4	1.7
E08000005	Rochdale	6.2	8.6	2.4
E08000018	Rotherham	7.2	10.0	2.9
E06000017	Rutland	4.5	9.5	5.0
E08000006	Salford	5.9	11.5	5.7
E08000028	Sandwell	3.7	7.2	3.5
E08000014	Sefton	5.3	10.0	4.6
E08000019	Sheffield	5.5	9.5	4.0
E06000051	Shropshire	4.7	9.9	5.2
E06000039	Slough	2.6	4.3	1.7
E08000029	Solihull	2.7	8.0	5.3
E10000027	Somerset	7.2	10.1	2.9
E06000025	South Gloucestershire	6.8	8.5	1.8
E08000023	South Tyneside	7.7	11.9	4.2
E06000045	Southampton	8.3	10.9	2.6
E06000033	Southend-on-Sea	6.4	9.4	3.0
E09000028	Southwark	2.9	7.3	4.4
E08000013	St. Helens	6.2	10.4	4.2
E10000028	Staffordshire	5.2	9.2	4.0
E08000007	Stockport	4.4	8.5	4.0
E06000004	Stockton-on-Tees	4.6	9.8	5.3
E06000021	Stoke-on-Trent	10.4	9.8	-0.6
E10000029	Suffolk	5.9	9.5	3.5
E08000024	Sunderland	8.9	11.3	2.5
E10000030	Surrey	4.1	7.9	3.8
E09000029	Sutton	5.4	6.7	1.3
E06000030	Swindon	4.2	9.1	4.9
E08000008	Tameside	8.9	9.6	0.7
E06000020	Telford and Wrekin	4.1	9.9	5.9
E06000034	Thurrock	2.8	8.2	5.3
E06000027	Torbay	10.4	10.4	0.0
E09000030	Tower Hamlets	3.2	6.8	3.5
E08000009	Trafford	2.9	7.9	5.1
E08000036	Wakefield	5.5	10.5	5.0
E08000030	Walsall	5.9	8.2	2.2
E09000031	Waltham Forest	1.3	5.1	3.7
E09000032	Wandsworth	5.0	8.2	3.2
E06000007	Warrington	5.5	9.3	3.9
E10000031	Warwickshire	5.9	8.8	2.9
E06000037	West Berkshire	3.2	9.2	6.0
E10000032	West Sussex	7.1	8.8	1.7
E09000033	Westminster	4.8	8.4	3.6
E08000010	Wigan	4.9	10.3	5.4
E06000054	Wiltshire	5.8	10.0	4.2
E06000040	Windsor and Maidenhead	4.2	7.8	3.6
E08000015	Wirral	4.9	10.4	5.6
E06000041	Wokingham	2.2	7.1	4.8
E08000031	Wolverhampton	5.9	6.7	0.8
E10000034	Worcestershire	6.3	9.2	3.0
E06000014	York	5.3	9.6	4.3



First published: August 2016

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