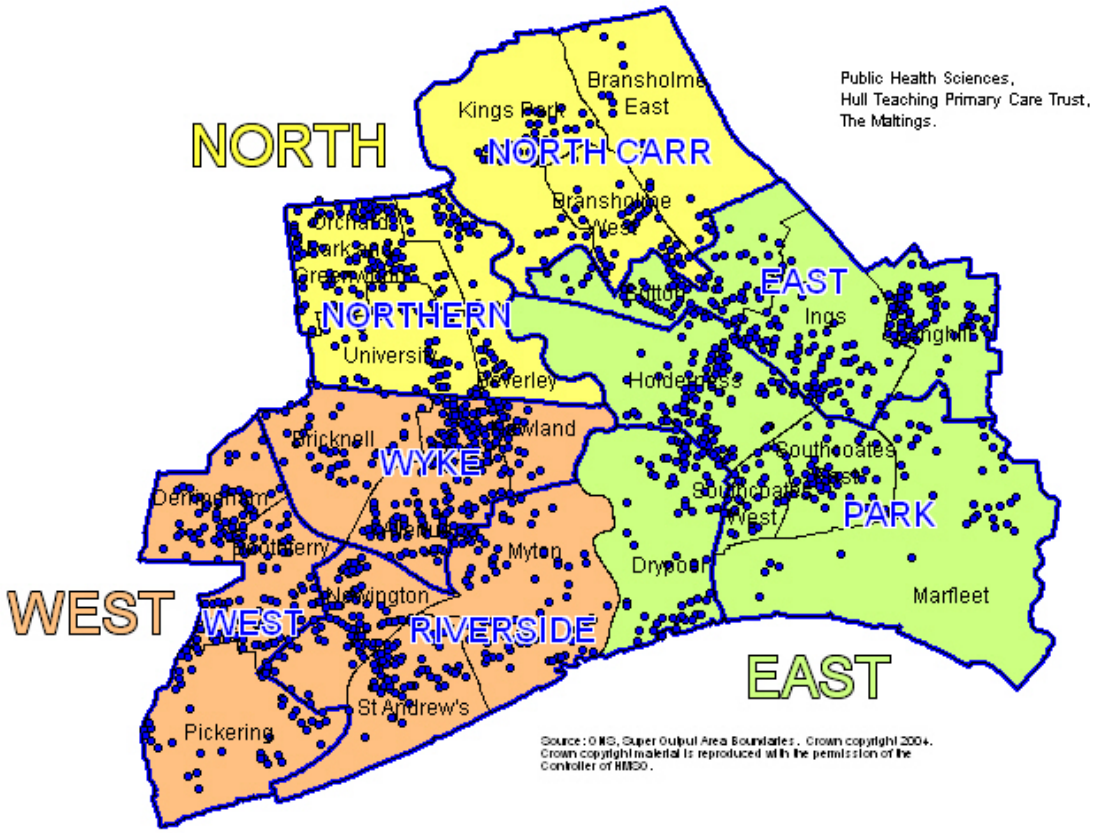
# Hull's Health and Lifestyle Survey 2007

# Smoking Report




**Robert Sheikh Iddenden, Tim Greene, Mandy Porter, Andrew Taylor.**
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## Key points/headlines

- The overall smoking prevalence in Hull adults in 2007 was 32%, a decrease from the 2003/2004 average of 39%, but well above the most recent England (2006) rate of 22%.

- Hull follows the national pattern of more men smoking (34%) than women (30%).

- Smoking rates were highest among young adults – around 40% in men aged 18-34 and around 35% in women – and lowest for men and women aged 75 years and over, 18% and 13% respectively.

- Smoking rates were much higher in poor areas, with the most deprived fifth of Hull having a smoking rate (48%, age-adjusted) double that in the least deprived fifth (22%, age-adjusted).

- Women in the two most deprived fifths of Hull had smoking rates higher than men in those areas, and were the only groups where smoking rates had increased since the 2003/2004 average.

- There were relatively higher rates of smoking for people who were unemployed or long-term sick/disabled or who had no educational qualifications.

- Smokers tended to have poorer mental health, to drink more heavily, to eat unhealthier diets, and to exercise less than non-smokers.

- Only in terms of overweight and obesity did smokers perform better than non-smokers, with the exception of women who smoked 20 or more cigarettes per day who had the highest percentage obese.

- Despite statistically significant differences in smoking prevalence among subgroups, smoking prevalence rates are high in all groups. Therefore while particular groups could be targeted by smoking cessation services, a more general approach is needed across Hull to tackle the high smoking rates seen across Hull.

## Summary

Smoking prevalence in Hull in 2007 was 40% higher than in England in 2006 and 45% higher than in the Yorkshire and Humber region in 2006.

There was wide variation in smoking prevalence by ward, ranging from 19% to 50% in men and 13% to 61% in women.

There was a strong association between age-adjusted smoking prevalence and local deprivation quintiles, 47% of men and 49% of women in the most deprived quintile smoked compared with 25% of men and 20% of women in the least deprived quintile.

In the two most deprived quintiles age-adjusted smoking prevalence was higher in women than men.

Age-adjusted smoking prevalence was highest in those with estimated after tax household income of less than £10,000 (46% in men; 45% in women).

Smoking prevalence was greatest amongst young people (43% of men aged 18-24 years; 34% of women aged 18-24 years, 37% of women aged 25-34 years) and lowest amongst the elderly (18% of men and 13% of women aged 75 years and over).

Age-adjusted smoking prevalence was highest in those not working due to long-term sickness or disability (51% in men; 47% of women), followed in men by those not working due to unemployment (43%) and in women who looked after the home or family (38%); and was lowest in retired people (around 20% crude and 9-10% age-adjusted).

Those with no educational qualifications had a higher age-adjusted prevalence of smoking (44% in men; 43% in women) than those with qualifications.

Age-adjusted percentage of heavy smokers (smoking at least 20 cigarettes per day) was higher among men (36%) than women (32%).

The age-adjusted percentage of smokers smoking heavily were similar to Great Britain 2006 in men, but one third higher in women.

The percentage of smokers smoking heavily increased with age up to 45-54 years (58% in men; 40% in women), thence decreasing with age. Only in those aged 55 years and over was the percentage of women smokers smoking heavily greater than in men.

The age-adjusted percentage of smokers smoking heavily increased between 2003 and 2007 by 23% in men but was little changed in women.

The highest age-adjusted percentage of smokers smoking heavily was in men not working due to long-term sickness or disability (63%) and women that were unemployed (35%).

The lowest age-adjusted percentage of smokers smoking heavily were among the least deprived quintile (26% in men; 19% in women) compared with 39% of men and 37% of women in the most deprived quintile.

Smokers with no educational qualifications had the highest age-adjusted percentage smoking heavily (49% in men; 36% in women) while those educated to degree or higher had the lowest percentage (26% in men; 17% in women).

Age-adjusted percentages perceiving a very big impact on health upon stopping smoking were lower in smokers (42% in men; 61% in women) than non-smokers (59% in men; 69% in women).

Among smokers age-adjusted percentages perceiving a very big impact on health upon stopping smoking were highest in heavy smokers (50% in men; 63% in women) and lowest in light smokers (34% in men; 52% in women).

The age-adjusted percentage that perceived there to be a very big impact on health upon stopping smoking increased by 6% between 2004 and 2007; by 22% in men that smoked; by 17% in women that smoked.

Smokers had a higher age-adjusted percentage with daily activities severely affected by health or disability (32% in men; 38% in women) than non-smokers (23% in men; 26% in women) with heavy smokers the worst affected (38% in men; 41% in women).

Smokers scored worse on the mental health index and on the health thermometer than non-smokers, while among smokers heavy smokers scored worse.

Lower age-adjusted percentages of smokers (10% in men; 8% in women) reported excellent general health than non-smokers (15% in men; 12% in women), while among smokers heavy smoking men (9%) had the lowest percentage reporting excellent general health and heavy smoking women (12%) the highest percentage.

Age-adjusted percentages reporting that their activities were affected by long-term illness or disability were higher in smokers (23% in men; 34% in women) than non-smokers (19% in men; 21% in women), with highest percentages in heavy smokers (31% in men; 36% in women).

Age-adjusted percentages registered as disabled were higher in smokers (9% in men; 12% in women) than non-smokers (8% in men; 7% in women), with the highest percentage among women in heavy smokers (15%) but among men in those that had stopped smoking (10%).

Age-adjusted percentages drinking alcohol on at least 4 days per week were higher among male smokers (26%) than male non-smokers (16%), with the highest percentage among men recorded in heavy smokers (31%); among females similar percentages of smokers and non-smokers drank alcohol on at least 4 days per week (7%), with the highest percentage among those that had stopped smoking (9%).

Among those that drank alcohol, age-adjusted percentages binge drinking at least once per week were higher among smokers (46% in men; 26% in women) than non-smokers (29% in men; 16% in women), with the highest percentages in heavy smokers (52% in men; 33% in women).

Age-adjusted percentages binge drinking at least once per week and exceeding recommended weekly units were higher among smokers (25% in men; 8% in women) than non-smokers (11% in men; 4% in women), with the highest percentages recorded in heavy smokers (29% in men; 9% in women).

Age-adjusted percentages of 'problem' drinkers (those binge drinking at least once per week and/or exceeding recommended weekly units) were higher in smokers (47% in men; 22% in women) than non-smokers (30% in men; 14% in women), with the highest percentages in heavy smokers (50% in men; 28% in women).

Smokers had lower age-adjusted percentages eating a healthy diet (59% in men; 71% in women) than non-smokers (75% in men; 82% in women), with the lowest percentages in heavy smokers (47% in men; 63% in women).

Smokers had higher age-adjusted percentages lacking knowledge about healthy diets (13% in men; 8% in women) than non-smokers (7% in men; 5% of women), with the highest percentages found in heavy smokers (15% in men; 10% in women).

While most respondents had tried to eat more healthily over the past year, age-adjusted percentages were lower in smokers (64% in men; 84% in women) than in non-smokers (77% in men; 89% in women), with the lowest percentages seen in heavy smokers (56% in men; 79% in women).

Age-adjusted percentages eating at least 5 portions of fruits and vegetables per day were far lower in smokers (13% in men; 16% in women) than in non-smokers (24% in men; 28% in women), with the lowest percentages in heavy smokers (8% in men; 11% of women).

Differences in the age-adjusted percentages of smokers and non-smokers meeting the national recommended exercise target of moderate or vigorous exercise of at least 30 minutes duration at least 5 times per week were smaller in women (23% of smokers; 25% of non-smokers) than in men (26% of smokers; 31% of non-smokers). In women heavy smokers had the highest percentage meeting the target (27%) while in men heavy smokers had the lowest percentage meeting the target.

Age-adjusted percentages of obesity were lower in smokers (15% in men; 19% in women) than in non-smokers (20% in men; 24% in women), with the highest percentage obese among women in heavy smokers (30%) while among men it was in former smokers (26%).

Similarly, age-adjusted percentages of people who were overweight were lower in smokers (46% in men; 30% in women) than in non-smokers (50% in men; 33% in women), while the highest percentages overweight were found in men who had never smoked (53%) and in women who had stopped smoking (35%).

Age-adjusted percentages that felt unsafe when walking alone in their area, or never went out, in the daytime were higher among smokers (46% in men; 23% in women) than non-smokers (12% in men; 14% in women).

Similarly age-adjusted percentages that felt very unsafe when walking alone in their area, or never went out, after dark were higher among smokers (20% in men; 40% in women) than non-smokers (14% in men; 30% in women).

Age-adjusted percentages that felt well informed about issues affecting their area were lower in smokers (54% in men; 50% in women) than non-smokers (59% in men; 63% in women), although differences between smokers and non-smokers that felt they could influence decisions affecting their area were smaller.

Few people had been involved in any local organisations over the preceding three years, with slightly lower age-adjusted percentages in smokers than non-smokers; age-adjusted percentages taking some action to attempt to solve a local problem were similar in smokers and non-smokers in men, slightly higher in smokers in women.

Higher age-adjusted percentages of smokers felt there was a very big problem in their area with crime (21% in men; 22% in women), verbal or physical threat or aggression (13% in men and women) and graffiti or vandalism (11% of men; 12% of women) than did non smokers; while fewer smokers felt these to not be a problem in their area than non-smokers.

Age-adjusted percentages trusting few or none of the people in their neighbourhood were higher in smokers (52% in men; 46% in women) than non-smokers (41% in men; 39% in women); while age-adjusted percentages feeling that their neighbourhood was an area where neighbours did not look out for each other were also higher in smokers (33% in men and women) than non-smokers (29% in men; 22% in women).

Although differences between smokers and non-smokers that spoke to either family members, friends or neighbours on most days were small between smokers and non-smokers, age-adjusted percentages were higher among smokers.

Difference between smokers and non-smokers that had someone they could ask for help if ill in bed were small, although age-adjusted percentages in smokers were slightly lower; differences in the number of people that could be turned to for comfort and support in the event of a serious crisis were also small, although slightly more smokers had none or 1-4 people they could turn to than did non-smokers.

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# 1 Introduction

The aim of this report is to examine smoking patterns in Hull as derived from Hull's 2007 Health and Lifestyle survey. While some of this information is presented in the main survey report available from the Hull PCT public health website (http://www.hullpublichealth.org), a more detailed analysis is presented here, together with an examination of health-related characteristics of smokers and non-smokers.

# 2 Methods

## *2.1 Survey methodology*

During early 2007, an adult (18+ years) Health and Lifestyle survey was carried out in Hull by the Hull Teaching Primary Care Trust (PCT) with a target of 4,000 residents. The survey was funded by OneHull with the fieldwork and data entry being undertaken by SMSR. Individuals were approached by interviewers knocking on doors and inviting the household member to participate in the survey; an interview was completed or a questionnaire was left for self-completion and the interviewer collected the questionnaire at an agreed later date. Quota sampling was used based on gender, ten-year age group, nine geographical areas and employment status so that the resulting sample was broadly representative of Hull's overall population with regard to these characteristics. A total of 4,086 residents participated in the survey, with approximately one in three households having a household member agreeing to participate in the survey.

## *2.2 Deprivation*

The Index of Multiple Deprivation 2004[1] score is a measure of deprivation derived for lower layer Super Output Area (LSOA) across England. These geographical areas have a minimum population size of 1,000 and a mean population size of 1,500. Each individual participating in the survey was assigned a deprivation score based on the LSOA in which they lived (from their postcode). Individual deprivation scores were then assigned to one of five different groups ranging from the 20% most deprived to the 20% least deprived areas in Hull (local quintiles).

[1] Index of multiple deprivation 2004, Department of Communities and Local Government, London www.communities.gov.uk/archived/general-content/communities/indicesofdeprivation/216309/ A new IMD score was released in November 2007, but survey analyses had already been completed using the IMD 2004.

### *2.3 Comparisons over time*

A local Health and Lifestyle survey was carried out in Hull by the Public Health Development Team[2] during 2003 which included information on levels of exercise as well as other health and health-related lifestyle information. A random sample of people aged between 16 and 84 years who were registered with a Hull General Practitioner (GP) were sent a self-completion questionnaire during 2003. The questionnaire was returned by 1,716 Eastern Hull PCT and 1,560 West Hull PCT residents (out of 6,500) giving an overall response rate of 50% which compares favourably to other recent general population surveys, especially in urban areas.

Although the most recent survey carried out during 2007 used different survey methodology (quota sampling), both surveys are broadly representative of the population of Hull as a whole, and can be validly compared to give recent trends.

A further representative sample of Hull residents (this time a 2004 Social Capital survey) was carried out in Hull in 2004. This survey asked some of the same questions around health as the health and lifestyle surveys. However, the smoking rates produced from this survey were very different (that is much higher) to those from the 2003 Health and Lifestyle survey. As it is not clear which of these two surveys are the most accurate, the weighted average prevalence from both these two surveys have been used as a baseline from which to compare the prevalence rates from the 2007 survey

### *2.4 National comparisons*

The Health Survey for England and the General Household Survey collect information on smoking status and number of cigarettes smoked on average per day. These are presented at both a national, and in some cases, regional level. These have been used to compare against local rates. The most recent Health Survey for England dates from 2005, while the most recent General Household Survey 2006 is for 2006.

### *2.5 Statistical issues*

#### 2.5.1 Age-gender-standardisation

As smoking rates are strongly related to both age and gender, these are likely to confound the effects of other characteristics on smoking rates, many of which are also related to age and gender (please see the explanation of what

[2] Now Public Health Science section of Hull Teaching Primary Care Trust.

is meant by confounding on ***page 102*** in the ***Appendix***). For this reason, age-standardised percentages are presented separately by gender for all local comparisons throughout this report (using the Hull 2007 population as the standard population), or age-gender-standardised percentages where gender-specific percentages are not presented. The effect of this is small, typically changing percentages by 1 or two points. In the case of employment status, very large differences were seen, (as membership of many employment groups is determined by age). For this reason, crude (i.e. non-age-standardised) percentages are presented for analyses by employment status alongside age-gender-standardised rates. National comparisons are not age-gender-standardised, as the detailed age-specific rates required for standardisation are not available.

### *2.6 Statistical terms*

Further discussion on standardisation, plus an explanation of other statistical terms, such as confounding and confidence intervals, used in this report are contained in the appendix starting on ***page 101***.

# 3 Results

## *3.1 Smoking prevalence*

### 3.1.1 Gender

The prevalence of smoking found in the 2007 health and lifestyle survey, by gender, is presented in ***Table 3.1*** along with results from previous Hull surveys and national prevalence from the 2006 General Household Survey. In 2007 32% of Hull adults reported that they smoked. Taking the weighted average smoking prevalence from the previous two surveys, this represents a decrease of 18%. The Hull smoking prevalence is almost 40% higher than that reported by the General Household Survey 2006 for Yorkshire and Humber region and 45% higher than for England. The differences between Hull and the Yorkshire and Humber region and between Hull and England are greater in males than females with Hull rates 42% and 48% higher respectively in males and 30% and 43% higher respectively in females. It should be noted, however, that the General Household Survey prevalence figures include those aged 16-17 years old. This may bias the comparisons slightly if smoking rates in those aged 16-17 are markedly different to those aged 18-19, although it is not clear in which direction the bias, if any, will occur. It should be noted that the General Household Survey only asked about cigarette smoking (so prevalence estimates are likely to be lower than for Hull (where all forms of tobacco smoking were included), although as the proportion of tobacco smokers that do not smoke cigarettes is very small, this bias will also be very small.

***Table 3.1: Prevalence of smoking in adults, Hull 2007 compared with General Household Survey 2006 (England and Yorkshire and Humber)***

| | Prevalence (%) | | |
|---|---|---|---|
| | **Males** | **Females** | **All** |
| Hull 2003 health & lifestyle survey | 33 | 31 | 32 |
| Hull 2004 social capital survey[3] | 47 | 40 | 44 |
| Weighted average Hull 2003-04 | 41 | 36 | 39 |
| Hull 2007 health & lifestyle survey | 34 | 30 | 32 |
| Yorkshire and Humber[3,4] | 24 | 23 | 23 |
| England[3,4] | 23 | 21 | 22 |

In order to adjust for any differences in the age-structure of the 2007 survey compared with previous Hull surveys, age-standardised prevalences were

[3] Adults defined as 16 years and over; cigarette smoking only
[4] General Household Survey 2006, Office for National Statistics

calculated and are presented in ***Table 3.2***. There were few differences in 2007 (as the Hull 2007 population was used as the standard population). The prevalence for 2003 was increased slightly, and for 2004 decreased slightly. The decrease in 2007 compared with the weighted average of 2003-04 is unchanged at 18% overall, although the decrease was slightly increased to 19% in males. The decrease in prevalence in 2007, compared with the average prevalence of 2003-04, was statistically significant for both males and females.

***Table 3.2: Age-standardised prevalence of smoking in adults***

| | Age-standardised prevalence (%) | | |
|---|---|---|---|
| | **Males** | **Females** | **All** |
| Hull 2003 health & lifestyle survey | 34.6 | 31.8 | 33.2 |
| Hull 2004 social capital survey[5] | 47.2 | 39.7 | 43.5 |
| Weighted average Hull 2003-04 | 42.3 | 36.1 | 39.2 |
| Hull 2007 health & lifestyle survey | 34.3 | 29.9 | 32.1 |

Smokers and non-smokers can be further broken down into those who smoke daily, those who smoke, but not everyday, those who used to smoke but no longer do so and those who have never smoked. This breakdown, by gender, is presented in ***Table 3.3***.

***Table 3.3: Smoking status by gender, comparisons with previous surveys (age-standardised percent)***

| **Gender and survey** | **Total** | **Smoking status (age-standardised %)** | | | |
|---|---|---|---|---|---|
| | | **Smokes daily** | **Smokes, not daily** | **Former smoker** | **Never smoked** |
| **Males** | | | | | |
| 2003 | 1,390 | 29.1 | 5.5 | 25.9 | 39.6 |
| 2004 | 2,017 | 38.0 | 9.2 | 28.7 | 24.2 |
| 2003/04* | 1,704 | 34.7 | 7.6 | 28.5 | 29.3 |
| 2007 | 1,946 | 27.6 | 6.7 | 25.6 | 40.1 |
| **Females** | | | | | |
| 2003 | 1,771 | 27.4 | 4.4 | 23.8 | 44.4 |
| 2004 | 1,982 | 30.2 | 9.6 | 25.0 | 35.2 |
| 2003-04* | 1,877 | 29.0 | 7.1 | 24.8 | 39.1 |
| 2007 | 2,050 | 25.8 | 4.1 | 23.5 | 46.5 |
| **All** | | | | | |
| 2003 | 3,161 | 28.2 | 4.9 | 24.9 | 42.0 |
| 2004 | 3,999 | 34.1 | 9.4 | 26.9 | 29.7 |
| 2003-04* | 3,580 | 31.9 | 7.4 | 26.6 | 34.1 |
| 2007 | 3,996 | 26.7 | 5.4 | 24.6 | 43.3 |

* Weighted average

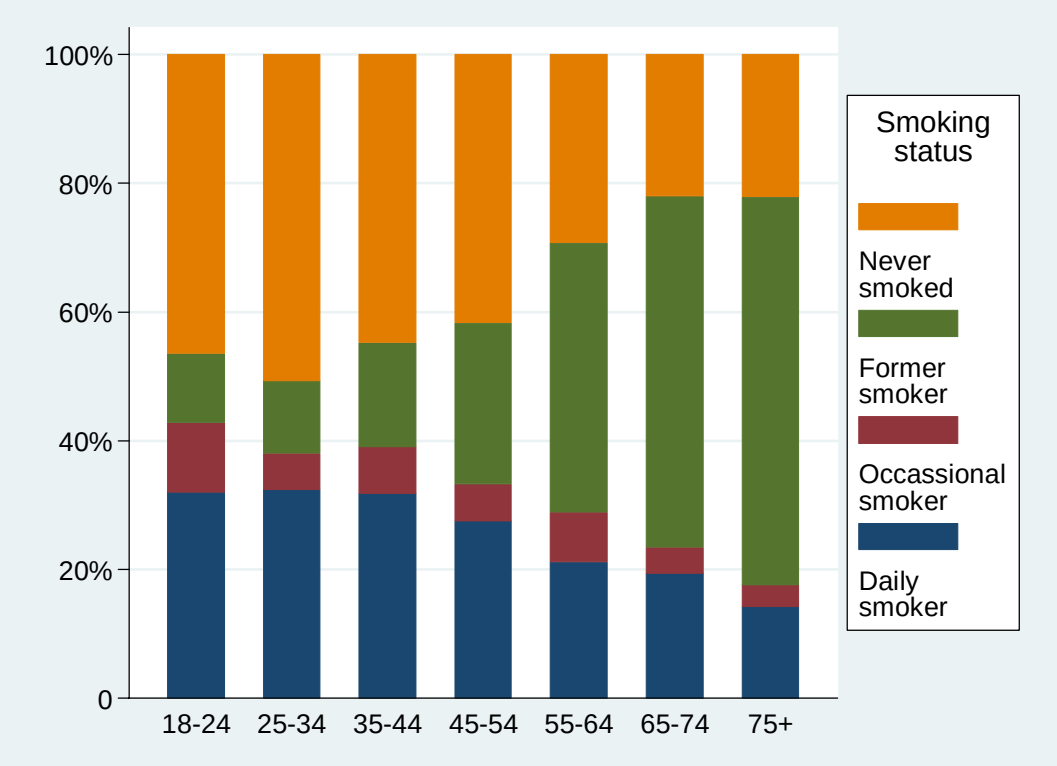
[5] Adults defined as 16 years and over; cigarette smoking only

Among respondents from the 2007 survey overall smoking prevalence was 31.7%. The proportion of smokers that do not smoke daily has increased slightly in men, from 18% to 20% comparing 2007 with the weighted average of 2003-04, although it decreased in women over this same period from 20% to 14%. The proportion reporting that they had never smoked increased over this same period by more than one third in men and almost one fifth in women, although there was hardly any change since the 2003 survey. At the same time the proportions reporting they were former smokers decreased by 10% in men and 5% in women between the average of 2003-04 and 2007. While it is perfectly possible for these changes to be correct, they might also be influenced by the current climate whereby smoking is increasingly being seen, in some quarters, as socially unacceptable, which may lead to a higher proportion of former smokers to say that they had never smoked.

### 3.1.2 Age

There are marked variations in smoking prevalence by age, with prevalence decreasing with increasing age. ***Figure 3.1*** illustrates smoking status by age in males. The prevalence of smoking clearly decreases with increasing age, although for the 3 youngest age groups, the proportion of daily smokers is the same, with the variation in these age groups due to occasional smokers.

***Figure 3.1: Smoking status in males, by age***



The proportion of those who have never smoked increases with decreasing age (22% of men aged 75+, 51% of men aged 25-34). This reflects the lower smoking rates overall in society today compared with when those in the older age groups were themselves young. The long term impact of this will be seen in diseases such as lung cancer, the majority of which are attributable to smoking, and heart disease, where rates in the long term will decrease. Disappointingly, the youngest age group (18-24) has a smaller proportion of 'never smoked', which may suggest that smoking rates in men of this age group are increasing.

***Figure 3.2*** shows the corresponding results for females. Here the different historical smoking patterns in females can be observed, with 54% of women aged 75+ reporting that they have never smoked, reflecting the fact that smoking rates in women peaked after the Second World War. The differences in the never smoked category are less pronounced although, encouragingly, in the 18-24 age group this is the same as for those aged 75+. With the exception of the 18-24 age group, smoking prevalence is higher in younger age groups, and decreases with increasing age.

***Figure 3.2: Smoking status in females by age***

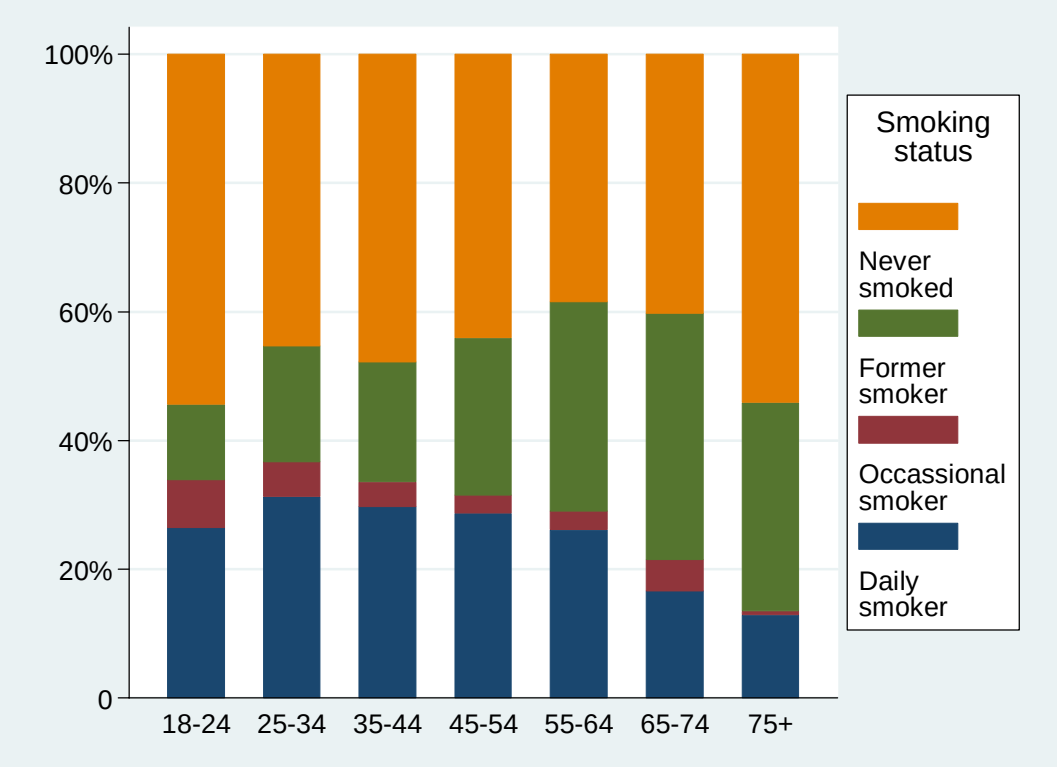
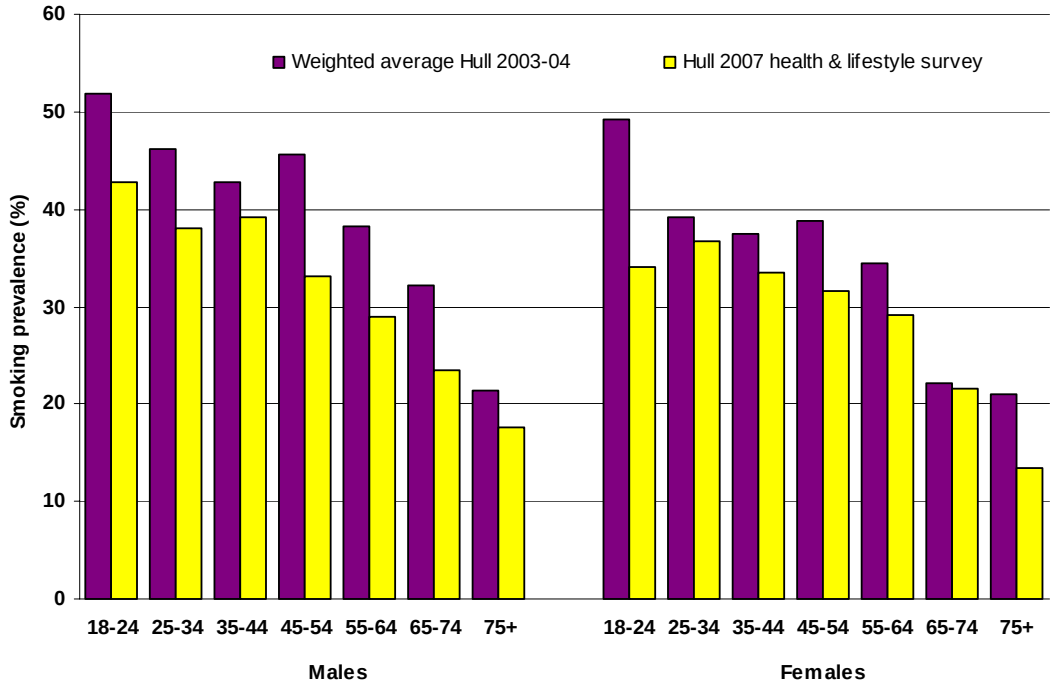



***Figure 3.3*** and ***Table 3.4*** illustrate the differences in smoking prevalence between men and women by age, as well as presenting comparisons with previous Hull surveys. In 2007 at each age, male smoking prevalence exceeded that in females, except in those aged 55-64 where female smoking prevalence was slightly higher than in males. The largest difference was seen

in those aged 18-24 with male smoking prevalence 8 percentage points higher than female smoking prevalence.

Looking at how smoking prevalence has changed since previous surveys, for each age group the prevalence from the 2004 social capital survey was higher in males than females, which is consistent with the 2007 survey (despite much higher prevalence reported at each age in the 2004 survey) and is consistent with national data (see ***Table 3.5***). This contrasts with the 2003 health and lifestyle survey which reported higher smoking prevalence in females aged 18-24 than in males of that age. However, it is difficult to know which set of figures are the most reliable. The social capital and 2007 health and lifestyle surveys both involved quota sampling which resulted in the number of survey responders having a similar age, gender, employment and residential structure (based on Area Committee Areas) as the overall Hull population. Nevertheless, the number of responders versus the number of non-responders can have an influence on the survey results if non-responders are substantially different from the responders. It is not known if or how the non-responders differ from the responders for any of these studies so it is not possible to assess the level of response bias between the studies. However, given that the relationships between ages and between genders for the 2007 health and lifestyle survey are consistent with those from both the social capital survey and the General Household Survey 2005, these are likely to be correct.

***Figure 3.3: Age-specific prevalence of smoking in Hull, comparing 2007 survey with the weighted average from the 2003 and 2004 surveys***




Smoking prevalence in 2007 increased for most age groups when taking the 2003 survey as the comparator, but decreased for each age group from that

reported in the 2004 social capital survey. We can probably assume that the smoking prevalence in 2003-2004 was somewhere between the two sets of figures reported. If we take the weighted average of these two surveys, prevalence rates have fallen in all age groups, for both males and females.

***Table 3.4: Prevalence (%) of smoking by age and gender, comparisons with other surveys in Hull***

| | Prevalence (%) of smoking by age and gender | | | | | | |
|---|---|---|---|---|---|---|---|
| | Age group (years) | | | | | | |
| | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
| ***Males*** | | | | | | | |
| Hull 2003 health & lifestyle survey | 30.2 | 45.0 | 36.5 | 39.5 | 30.0 | 25.1 | 16.3 |
| Hull 2004 social capital survey* | 59.0 | 46.9 | 46.6 | 50.3 | 47.0 | 39.3 | 26.4 |
| Weighted average Hull 2003-04 | 51.9 | 46.2 | 42.8 | 45.6 | 38.3 | 32.1 | 21.3 |
| Hull 2007 health & lifestyle survey | 42.8 | 38.0 | 39.1 | 33.2 | 28.9 | 23.4 | 17.6 |
| ***Females*** | | | | | | | |
| Hull 2003 health & lifestyle survey | 40.9 | 35.4 | 34.3 | 32.1 | 34.1 | 19.8 | 16.5 |
| Hull 2004 social capital survey* | 54.5 | 42.0 | 40.0 | 45.4 | 35.1 | 25.4 | 25.5 |
| Weighted average Hull 2003-04 | 49.3 | 39.1 | 37.4 | 38.8 | 34.5 | 22.2 | 21.0 |
| Hull 2007 health & lifestyle survey | 34.0 | 36.7 | 33.5 | 31.6 | 29.1 | 21.5 | 13.4 |

*Youngest age group in the social capital survey was 16-24 years

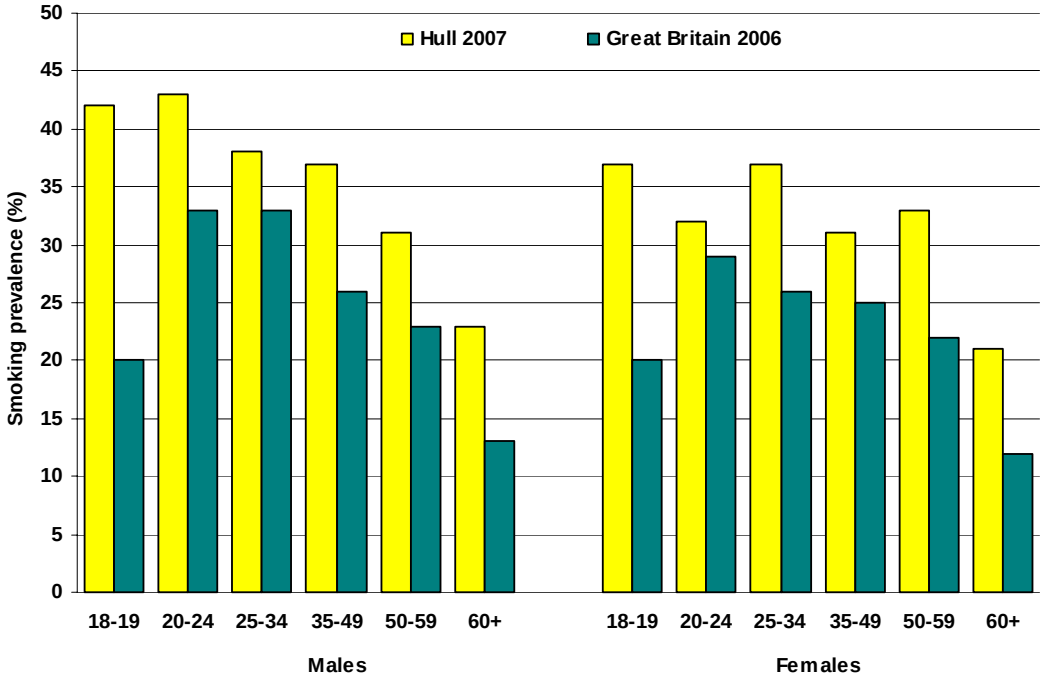
The Hull 2007 smoking prevalences are consistently higher than those reported for Great Britain 2006 (***Figure 3.4*** and ***Table 3.5***). While the General Household Survey asked only about cigarette smoking, the proportion of tobacco smokers who smoke only cigars or pipes is very small, and would not produce a large bias in these comparisons. In the youngest age group the General Household Survey includes those aged 16-19 years. This may bias the comparison with those aged 18-19 in the 2007 survey, if the smoking rates in those aged 16-17 are markedly different to those aged 18-19. Given that the Great Britain 16-19 smoking prevalence is around half that among those aged 18-19 years in Hull, whereas the differences for other age groups are lower, it is likely that the 16-19 figure reported under-estimates the 18-19 years figure required, therefore, a direct comparison in this youngest age group cannot be made. This will impact on age-sex-standardised rates produced, but the size of the bias, while not quantifiable, is likely to be small.

***Table 3.5: Prevalence (%) of smoking by age and gender, comparisons with Great Britain 2006***

| | Prevalence of smoking by age and gender (%) | | | | | |
|---|---|---|---|---|---|---|
| | **18-19*** | **20-24** | **25-34** | **35-49** | **50-59** | **60+** |
| ***Hull 2007*** | | | | | | |
| Males | 42 | 43 | 38 | 37 | 31 | 23 |
| Females | 37 | 32 | 37 | 31 | 33 | 21 |
| ***Great Britain 2006*** | | | | | | |
| Males | 20 | 33 | 33 | 26 | 23 | 13 |
| Females | 20 | 29 | 26 | 25 | 22 | 12 |

*Lowest age band 16-19 years for Great Britain

***Figure 3.4: Age-specific prevalence of smoking, comparing Hull 2007 with Great Britain 2006[6]***




### 3.1.3 Employment status

***Figure 3.5*** and ***Table 3.6*** show smoking prevalence by employment status and gender. Crude and age-standardised prevalence rates have both been presented here, as the age-standardisation process distorts the prevalence considerably, due to employment status being related to age.

***Table 3.6: Smoking prevalence (%) by employment status and gender, crude and age-standardised (AgeSt)***

| Employment status | Prevalence of smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Number | Prevalence (%) | | Number | Prevalence (%) | |
| | | Crude | AgeSt | | Crude | AgeSt |
| Working | 1,119 | 33.6 | 31.1 | 924 | 28.2 | 25.4 |
| Student | 52 | 44.2 | 29.7 | 81 | 18.5 | 13.2 |
| Retired | 430 | 21.2 | 9.3 | 478 | 19.0 | 10.1 |
| Looking after home/family | 31 | 41.9 | 26.9 | 313 | 41.2 | 37.5 |
| Unemployed* | 181 | 48.6 | 43.0 | 124 | 34.7 | 35.8 |
| Long-term sick/disabled | 129 | 47.3 | 51.1 | 115 | 60.9 | 47.2 |

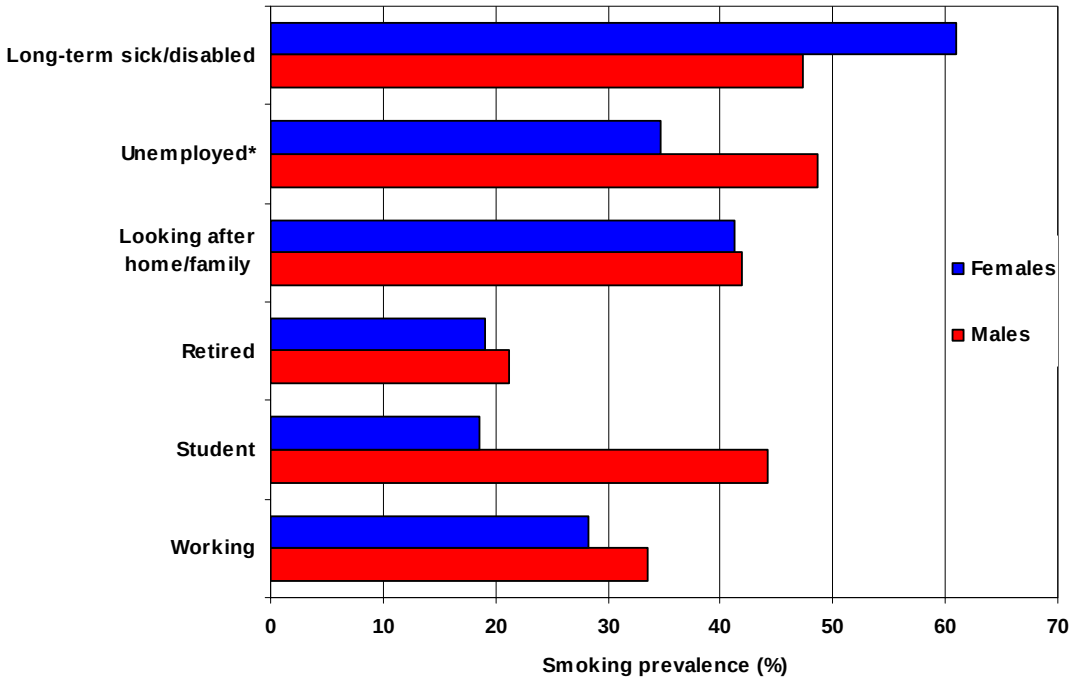
*Includes those on a government training scheme

[6] General Household Survey 2006 (Office for National Statistics), cigarette smoking only

Variation in crude smoking prevalence was greater in females than males, with 61% of women who do not work due to long-term sickness or disability smoking, compared to less than 20% of women who were students or retired. Women in employment had a lower prevalence of smoking (28%) than those looking after the home or family (41%). Age-standardised prevalence rates were smaller than crude rates, but the differences between groups were similar. The age-standardised prevalence of smoking was statistically significantly higher among women who were not working due to long-term sickness or disability than women who were working, while significantly lower among retired women.

Among men, the retired had the lowest crude smoking prevalence (21%), followed by working men (34%). All other groups had a crude smoking prevalence of more than 40%, highest amongst the unemployed at 49%. Age-standardised prevalence rates were lower for most groups, but were higher for the long-term sick or disabled. Variation in age-standardised prevalence rates was greater in males than in females. The age-standardised prevalence of smoking was statistically significantly lower among retired men than among men who were working.

***Figure 3.5: Smoking prevalence (crude) by employment status and gender***



### 3.1.4 Deprivation

Smoking prevalence is highest amongst deprived groups. Local quintiles[7] of the IMD2004 were used to illustrate these differences. As can be seen in ***Figure 3.6*** the prevalence of smoking was highest in the most deprived quintile, decreased with each succeeding quintile, and was lowest in the least deprived quintile. ***Figure 3.6*** also shows that changes in smoking prevalence between the weighted average of 2003-04 and 2007 differed by deprivation quintile, with larger decreases in the three least deprived quintiles than in the most deprived quintiles, further increasing the inequalities gap between the most deprived and least deprived quintiles. Amongst women, the prevalence of smoking in the two most deprived quintiles increased between the weighted average of 2003-04 and 2007.

***Figure 3.6: Age-standardised smoking prevalence by deprivation quintile, gender and survey***

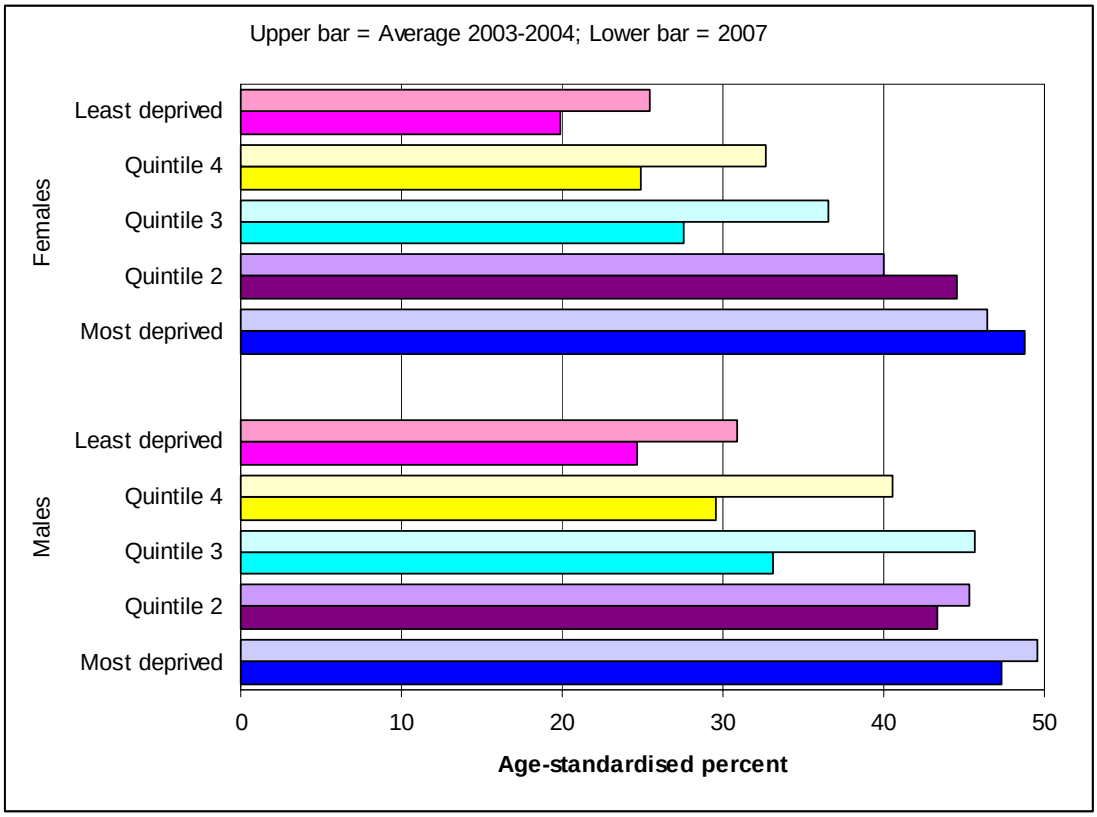



***Table 3.7*** shows the age-specific prevalence of smoking broken down by deprivation quintile and gender, along with comparisons with previous Hull surveys. Making comparisons with the weighted average of 2003 and 2004 surveys, we see that the prevalence of smoking in men decreased for most

[7] Local quintiles were derived, as all Hull wards are in the 2 most deprived national quintiles, and so the effect of increasing deprivation would not be seen

age groups in most deprivation quintiles, but with greater decreases generally seen in the three least deprived quintiles.

***Table 3.7: Smoking prevalence (%) by deprivation quintile, gender and age, comparisons with previous Hull surveys***

| Gender and age | Smoking prevalence (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Males Deprivation quintile | | | | | Females Deprivation quintile | | | | |
| | Most | 2 | 3 | 4 | Least | Most | 2 | 3 | 4 | Least |
| ***2003 health and lifestyle survey*** | | | | | | | | | | |
| 18-24 | 28.6 | 47.4 | 25.0 | 13.3 | 33.3 | 47.7 | 43.6 | 51.4 | 28.6 | 33.3 |
| 25-34 | 70.3 | 59.5 | 37.0 | 32.0 | 30.0 | 42.9 | 45.6 | 43.6 | 28.6 | 22.1 |
| 35-44 | 47.1 | 34.0 | 49.0 | 36.7 | 24.7 | 55.6 | 43.1 | 40.0 | 24.3 | 18.8 |
| 45-54 | 52.6 | 48.5 | 52.1 | 31.8 | 24.6 | 51.2 | 40.5 | 31.3 | 33.3 | 18.6 |
| 55-64 | 44.7 | 32.0 | 39.1 | 32.0 | 13.7 | 44.2 | 44.4 | 41.7 | 23.3 | 21.5 |
| 65-74 | 37.0 | 33.3 | 31.6 | 14.0 | 13.6 | 35.5 | 25.4 | 12.8 | 18.8 | 12.7 |
| 75+ | 16.0 | 17.2 | 25.0 | 4.2 | 18.5 | 24.0 | 24.4 | 18.2 | 9.7 | 0.0 |
| All* | 46.7 | 41.9 | 39.3 | 26.9 | 24.1 | 44.6 | 39.7 | 36.2 | 24.9 | 19.3 |
| ***2004 social capital survey*** | | | | | | | | | | |
| 18-24 | 71.9 | 64.8 | 59.3 | 58.0 | 45.8 | 56.9 | 60.7 | 45.8 | 56.1 | 51.1 |
| 25-34 | 50.0 | 55.3 | 47.6 | 50.8 | 32.4 | 49.3 | 31.3 | 46.2 | 45.5 | 35.1 |
| 35-44 | 50.7 | 40.0 | 50.0 | 43.6 | 49.1 | 49.3 | 40.7 | 32.6 | 49.5 | 29.7 |
| 45-54 | 51.3 | 52.9 | 55.8 | 50.7 | 40.4 | 55.7 | 46.9 | 41.5 | 31.5 | 58.6 |
| 55-64 | 46.2 | 45.7 | 62.0 | 60.4 | 23.7 | 38.9 | 36.8 | 36.6 | 35.5 | 27.3 |
| 65-74 | 35.9 | 32.3 | 26.3 | 50.0 | 48.4 | 30.4 | 25.0 | 28.9 | 22.7 | 17.1 |
| 75+ | 33.3 | 25.0 | 19.2 | 15.4 | 25.0 | 40.5 | 26.3 | 23.7 | 21.4 | 12.5 |
| All* | 50.7 | 47.8 | 49.4 | 49.3 | 38.8 | 47.4 | 39.5 | 37.6 | 39.5 | 35.1 |
| ***Average Hull 2003-04*** | | | | | | | | | | |
| 18-24 | 60.3 | 60.3 | 48.7 | 50.0 | 41.9 | 53.4 | 53.7 | 47.9 | 45.7 | 42.4 |
| 25-34 | 56.5 | 56.6 | 43.8 | 42.3 | 31.7 | 47.0 | 39.0 | 45.0 | 38.9 | 28.5 |
| 35-44 | 49.5 | 37.3 | 49.6 | 41.5 | 35.2 | 52.0 | 41.8 | 35.8 | 38.5 | 23.6 |
| 45-54 | 51.8 | 51.2 | 54.0 | 41.7 | 31.9 | 53.8 | 44.2 | 35.9 | 32.3 | 28.7 |
| 55-64 | 45.6 | 37.6 | 51.0 | 46.6 | 17.1 | 41.2 | 40.8 | 39.3 | 27.5 | 23.5 |
| 65-74 | 36.4 | 32.9 | 28.9 | 30.9 | 28.0 | 32.5 | 25.3 | 20.0 | 20.0 | 14.3 |
| 75+ | 25.0 | 20.8 | 22.0 | 8.1 | 21.6 | 33.9 | 25.3 | 21.1 | 13.3 | 7.4 |
| All* | 49.5 | 45.3 | 45.7 | 40.5 | 30.9 | 46.4 | 40.0 | 36.6 | 32.7 | 25.4 |
| ***2007 health and lifestyle survey*** | | | | | | | | | | |
| 18-24 | 51.7 | 50.0 | 44.0 | 27.1 | 40.0 | 43.6 | 56.8 | 29.0 | 23.7 | 24.5 |
| 25-34 | 54.2 | 33.9 | 37.9 | 31.8 | 34.5 | 61.2 | 50.0 | 25.7 | 34.0 | 28.2 |
| 35-44 | 52.6 | 52.3 | 43.8 | 38.9 | 17.9 | 55.2 | 50.0 | 34.9 | 27.0 | 19.8 |
| 45-54 | 51.9 | 47.5 | 20.8 | 29.0 | 27.3 | 61.8 | 51.9 | 28.1 | 25.6 | 16.3 |
| 55-64 | 46.7 | 44.8 | 25.7 | 21.4 | 18.3 | 40.5 | 41.4 | 23.5 | 28.7 | 23.4 |
| 65-74 | 24.1 | 30.4 | 28.9 | 26.2 | 11.7 | 41.9 | 22.2 | 23.1 | 16.3 | 15.8 |
| 75+ | 21.4 | 31.3 | 14.8 | 20.5 | 7.4 | 21.6 | 22.2 | 25.0 | 10.0 | 4.6 |
| All* | 47.3 | 43.3 | 33.1 | 29.5 | 24.7 | 48.8 | 44.5 | 27.6 | 24.9 | 19.9 |

*Age-standardised percent

Amongst women more than half of age groups in the 2 most deprived quintiles saw increases in prevalence (hence the increase in age-standardised

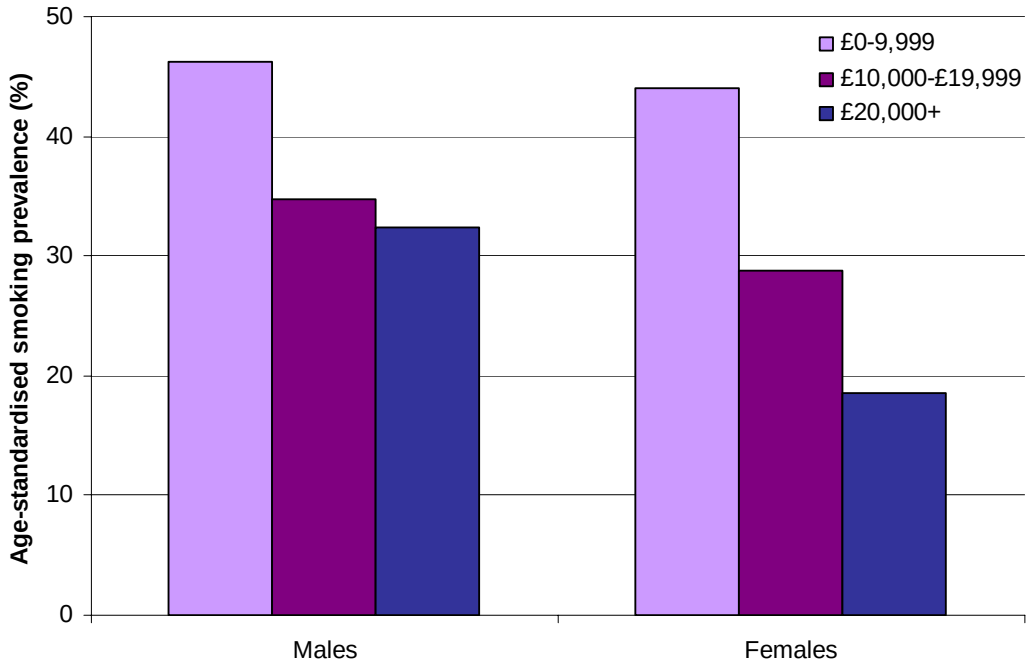
prevalence in these groups) between 2003-04 and 2007, while in the three least deprived quintiles, the majority of age groups saw decreases in prevalence, with age-standardised prevalence decreasing by around one-quarter, as for men. None of the changes in age-standardised prevalence rates between the average of 2003-04 and 2007 were statistically significant, with the sole exception of men in the middle deprivation group.

Looking at comparisons between quintiles for 2007, amongst both men and women the age-standardised prevalence of smoking in 2007 in the most deprived quintile was statistically significantly higher than in the least deprived quintile, the second least deprived quintile and the middle quintile; while age-standardised prevalence was statistically significantly lower in the least deprived quintile than in the two most deprived quintiles, again for both men and women.

### 3.1.5 Income

***Figure 3.7*** and ***Table 3.8*** present age-standardised prevalence rates by estimated after tax household income
.

***Figure 3.7: Age-standardised smoking prevalence (%) by estimated after tax household income***




Here there appeared to be a clear association between smoking prevalence and income in females, 44% of women with an estimated after tax household income of less than £10,000 were smokers, compared to 29% and 19% of

those with an estimated after tax household income of £10-19,999 and £20,000 or more respectively. These differences were each statistically significant. In men we also saw higher smoking prevalence in those with an estimated after tax household income of less than £10,000 (46%) compared with those earning £10-19,999 and £20,000 and over (35% and 33% respectively), although in men these differences were not statistically significant.

***Table 3.8: Age-standardised smoking prevalence (%) by estimated after tax household income***

| Estimated after tax Income | Age-standardised smoking prevalence (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | Females | | All | |
| | Total | % | Total | % | Total | % |
| £0-9,999 | 327 | 46.2 | 409 | 44.0 | 736 | 45.1 |
| £10,000-19,999 | 462 | 34.7 | 424 | 28.7 | 886 | 31.7 |
| £20,000+ | 391 | 32.5 | 338 | 18.6 | 729 | 25.6 |

### 3.1.6 Area committee area and locality

***Figure 3.8*** illustrates the age-standardised smoking prevalence rates from the 2007 survey by locality of residence, with comparisons to the weighted average of the 2003 and 2004 surveys. With the exception of North locality, men had higher age-standardised smoking prevalence rates than women. Amongst men, residents of North and West localities had higher age-standardised smoking prevalence rates than East locality (32%), although rates in each locality had decreased since the weighted average of 2003-04 by around 20%, although a slightly lower decrease in West locality. Differences between localities in 2007, and in changes since 2003-04 were not statistically significant.

Amongst women, North locality residents had a statistically significantly higher age-standardised smoking prevalence in 2007, 39% compared with 27% and 28% respectively in East and West localities. Looking at changes from 2003-04 to 2007 decreases were seen in East and West localities, with the decrease in East locality (29%) statistically significant. North locality females were the only group to see smoking prevalence increase between 2003-04 and 2007, rising by 9%. This might be explained by the third of female respondents from this locality that were in the most deprived quintile and the 23% who were in the second most deprived quintile, where as we saw earlier women form both these quintiles had seen increases in smoking rates since 2003-04, although the effect of this is balanced somewhat by the third of female respondents in this locality that were in the least deprived quintile.

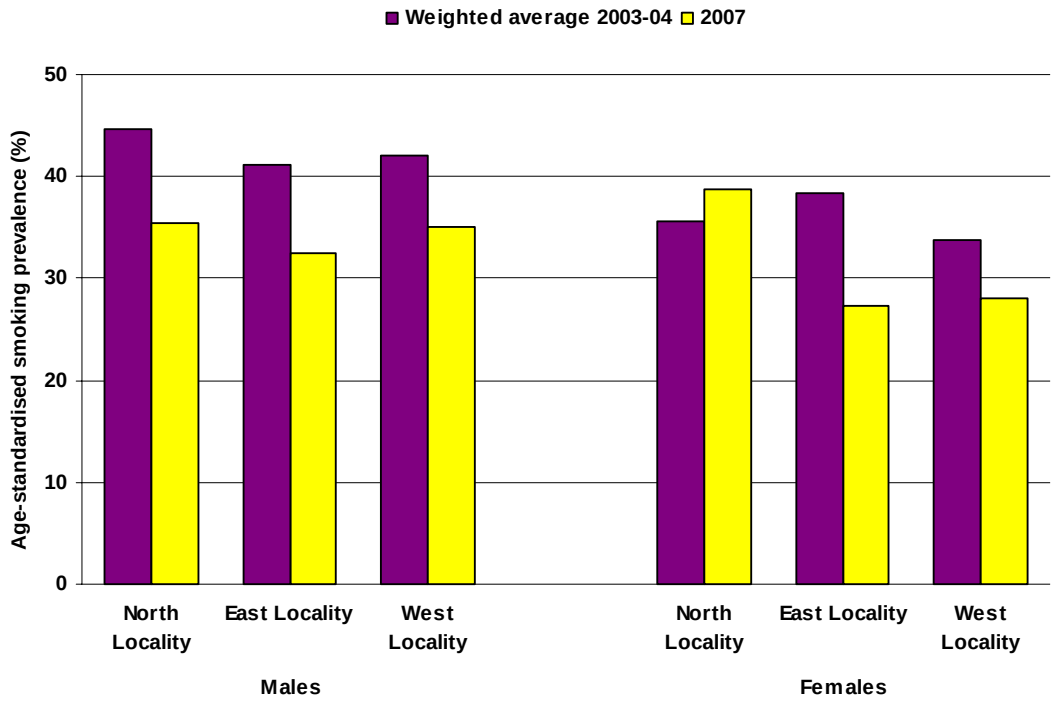
In ***Table 3.9*** age-standardised prevalence rates are further broken down to Area Committee Area of residence, which are presented for the 2007 survey, each of the 2003 and 2004 surveys individually plus their weighted average.

***Table 3.9: Age-standardised smoking prevalence (%) by area committee area and locality, comparisons with previous surveys***

| Area committee area / locality | Smoking prevalence (%) by survey | | | |
|---|---|---|---|---|
| | 2003 | 2004 | Average 2003-04 | 2007 |
| **Males** | | | | |
| North Carr | 49.3 | 48.3 | 49.4 | 33.7 |
| Northern | 34.2 | 45.6 | 40.8 | 36.5 |
| **North Locality** | **41.3** | **46.6** | **44.6** | **35.4** |
| East | 28.0 | 47.7 | 39.0 | 34.7 |
| Park | 32.0 | 49.8 | 42.1 | 32.0 |
| Riverside (East) | 37.5 | 49.5 | 43.4 | 27.5 |
| **East Locality** | **30.7** | **48.7** | **41.1** | **32.4** |
| Riverside (West) | 46.1 | 56.4 | 52.4 | 41.8 |
| West | 27.9 | 42.3 | 36.4 | 24.2 |
| Wyke | 34.0 | 40.4 | 38.7 | 37.8 |
| **West Locality** | **34.8** | **46.5** | **42.1** | **35.1** |
| ***Hull*** | ***34.6*** | ***47.2*** | ***42.3*** | ***34.3*** |
| **Females** | | | | |
| North Carr | 40.7 | 42.3 | 41.6 | 35.6 |
| Northern | 28.5 | 34.2 | 31.8 | 42.6 |
| **North Locality** | **33.2** | **37.2** | **35.6** | **38.7** |
| East | 34.1 | 47.4 | 41.0 | 27.4 |
| Park | 28.8 | 40.4 | 35.5 | 28.8 |
| Riverside (East) | 29.3 | 49.4 | 39.1 | 24.4 |
| **East Locality** | **31.5** | **44.7** | **38.4** | **27.3** |
| Riverside (West) | 43.6 | 39.7 | 41.5 | 34.7 |
| West | 26.6 | 35.9 | 31.2 | 26.1 |
| Wyke | 29.3 | 32.3 | 31.3 | 24.6 |
| **West Locality** | **31.0** | **35.6** | **33.7** | **28.1** |
| ***Hull*** | ***31.8*** | ***39.7*** | ***36.1*** | ***29.9*** |

Looking at Area Committee Area, in 2007 age-standardised smoking prevalence rates ranged in men from 24% in West to 42% in Riverside (West), with decreases seen for each Area Committee Area comparing 2003-04 with 2007, although none of these decreases was statistically significant. Prevalence rates in 2007 were higher in men than women for each Area Committee Area with the exception of West Area Committee Area the two Area Committee Areas in North locality, in both of which a majority of female respondents were in the two most deprived quintiles (49% of Northern female respondents in the most deprived quintile; 54% of North Carr female respondents in the second most deprived quintile).

***Figure 3.8: Age-standardised smoking prevalence (%) in Hull by locality of residence, comparing the 2007 survey with the weighted average from the 2003 and 2004 surveys***



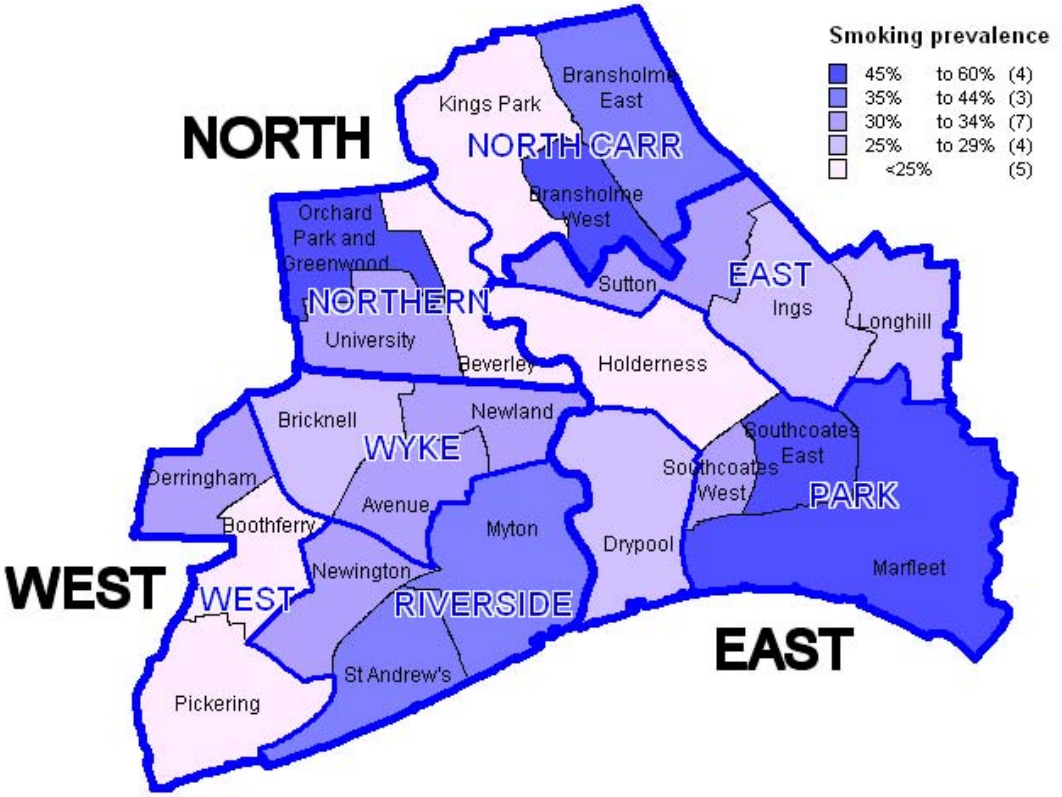

Among women, each Area Committee Area saw prevalence of smoking decrease between 2003-04 and 2007, with the exception of Northern, where a 34% increase was seen, although this was not statistically significant. Again this increase may be directly attributable to the increases seen in women in the two most deprived quintile over this same period, who form more than half of Northern female respondents, and will be driven by the smoking prevalence rate in Orchard Park and Greenwood, the Northern Area Committee Area ward with the largest number of respondents from Northern Area Committee Area, amongst whom 96% were from the most deprived quintile. The largest decreases in smoking prevalence in women by Area Committee Area were in Riverside (East) and Park, both in East locality, with the latter being a statistically significant decrease of 33%.

Smoking prevalence rates can be broken down further to ward level, to further refine which parts of Hull have the largest problem with smoking. Ward level estimates of smoking prevalence are presented in ***Figure 3.9***, although due to the smaller numbers involved at ward-level males and females have been combined, and crude rates were produced, as the number of respondents from some wards were too few to produce reliable age-standardised prevalence rates. However, as mentioned earlier, crude and age-standardised prevalence rates are generally very close (1-2 percentage points difference) as the age-structure of the survey respondents is very similar to that of the standard population used (Hull 2007). Four wards had a smoking prevalence greater than 45%. The highest smoking prevalence was in Marfleet (59%), followed by Orchard Park and Greenwood (56%),

Southcoates East (50%) and Bransholme West (48%. Three more wards had a smoking prevalence greater than 40%: Bransholme East, St Andrews and Myton. In each of the seven ward with smoking prevalence above 40%, at least 80% of respondents were in the two most deprived quintiles, and 6 out of the 7 had no respondents in the two least deprived quintiles.

The national smoking prevalence rate reported in the General Household Survey 2006 was 22% for England and 23% for Yorkshire and the Humber region. Eighteen out of the twenty three wards in Hull had smoking rates higher than both of these.

***Figure 3.9: Smoking prevalence by ward***




### 3.1.7 Educational attainment

***Table 3.10*** and ***Figure 3.10*** show the variation in age-standardised smoking prevalence rates by gender and the highest educational qualification achieved. Among males the smoking prevalence rates were highest in those with no qualifications (44%), one third higher than in those with GCSEs/O-levels/CSEs and around 50% higher than in those educated to beyond GCSE/O-level/CSE. The age-standardised prevalence of smoking in men with no qualifications was statistically significantly higher than among men educated to beyond O-level/GCSE level.

***Figure 3.10: Smoking prevalence (age-standardised percent) by highest educational qualification achieved and gender***

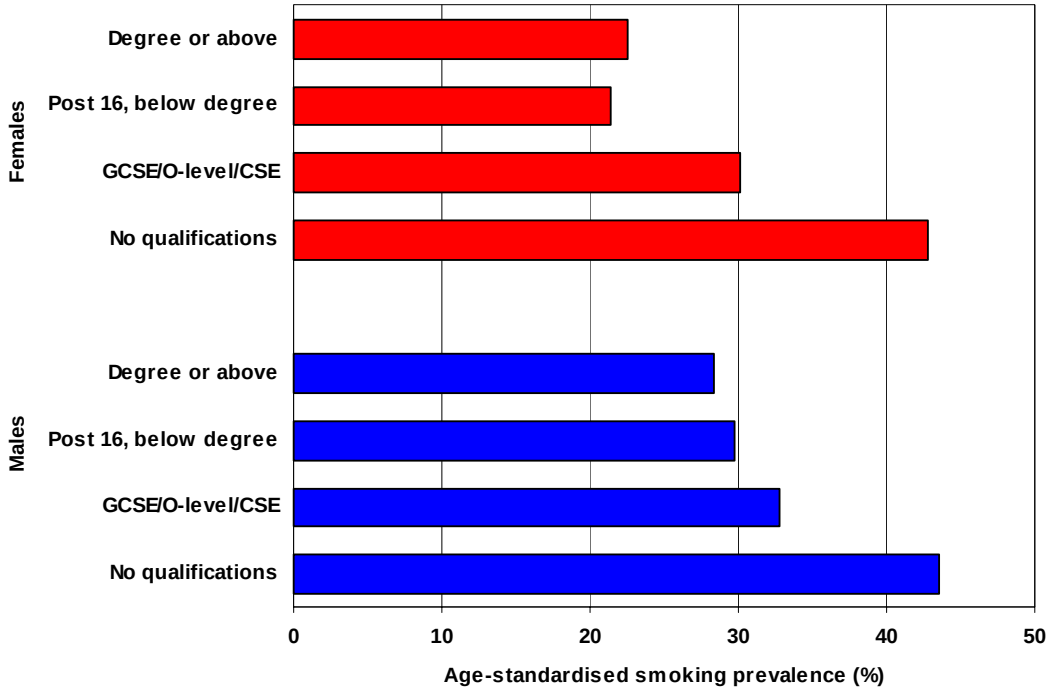



***Table 3.10: Smoking prevalence (age-standardised percent) by highest educational qualification achieved and gender***

| Highest educational qualification held | Smoking prevalence (%) by highest educational qualification held | | | |
|---|---|---|---|---|
| | Males | | Females | |
| | Total | Smoking % | Total | Smoking % |
| No qualifications | 565 | 43.6 | 650 | 42.8 |
| GCSE/O-level/CSE | 443 | 32.8 | 591 | 30.1 |
| Post 16, below degree | 414 | 29.8 | 252 | 21.4 |
| Degree or above | 282 | 28.3 | 271 | 22.5 |

Among female respondents the differences were more marked. Those with no qualifications had a smoking prevalence of 43%, similar to men. This was more than 40% higher than those whose highest educational qualification was GCSEs/O-levels/CSEs, amongst whom 30% smoked; and double the prevalence of those educated beyond 16 years but below degree level (prevalence of 21%). Those educated to degree level or higher had a slightly higher prevalence than those educated beyond age 16 years but below degree level, at 22.5%. The age-standardised prevalence of smoking in women with no qualifications was statistically significantly higher than among women educated to beyond GCSE/O-level/CSE level. The differences between women educated to GCSE/O-level/CSE level and those with higher educational qualifications were not statistically significant.

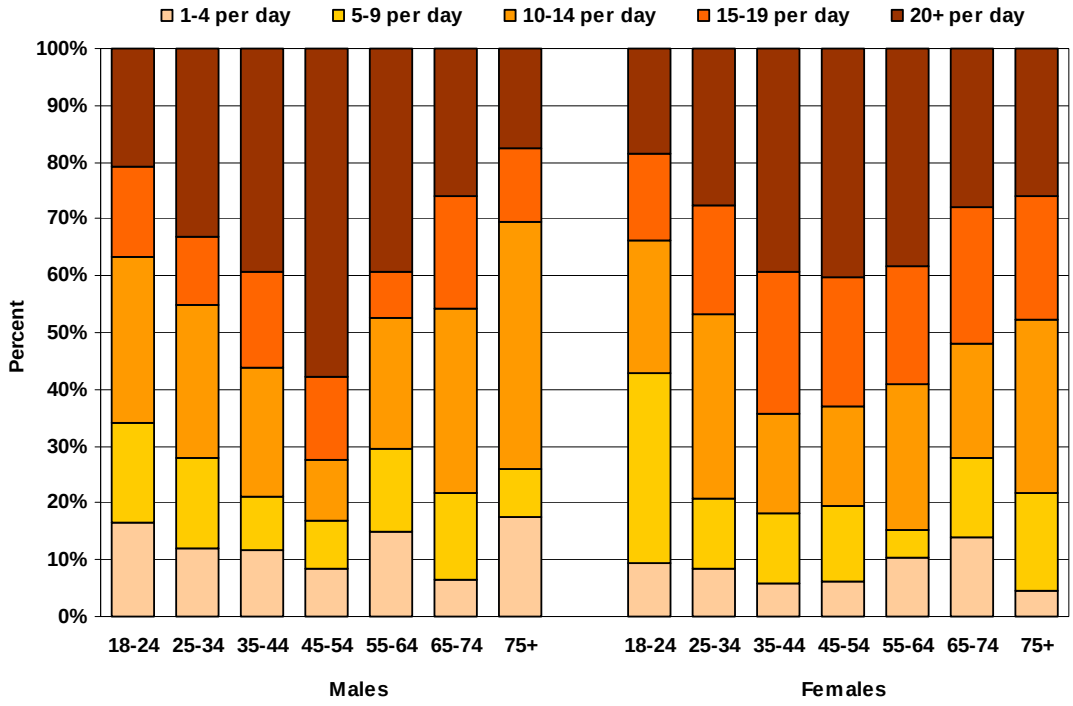
### *3.2 Tobacco dose*

Tobacco dose is defined here as the average daily number of cigarettes smoked. Definitions of light smokers vary, with some sources saying less than 20 cigarettes per day[8], while others say less than 5 cigarettes per day[9] or less than 10 a day[10]. Data are presented here in the following categories: 1-4, 5-9, 10-14, 15-19 and 20+ tobacco doses per day, as well as categorised in to heavy (20+ per day), moderate (10-19 per day) and light (<10 per day) smokers, in order to allow comparisons with national prevalence data.

#### 3.2.1 Gender and age

The heaviest smokers among survey respondents who smoked were men aged 45-54 years, among whom 58% smoked 20 or more cigarettes per day (***Figure 3.11*** and ***Table 3.11***)

***Figure 3.11: Average number of cigarettes smoked per day among smokers by gender and age***




Amongst men aged 35-44 years and 55-64 years almost 40% smoked 20 or more cigarettes per day. Among women, the highest proportions of heavy

[8] General Household Survey 2005. Office for National Statistics.
[9] See, for example, Bjartveit K, Tverdal A. Health Consequences of Smoking 1-4 cigarettes a day. *Tobacco Control 2005*: 14:315-320.
[10] Health Survey for England 2006. The Information Centre.

smokers were in those aged 35-64 years with around 40% in these age groups smoking 20 or more cigarettes per day. Across all males, adjusting for age, 36% of smokers smoked at least 20 cigarettes per day, compared with 32% of women. More men than women smoked 20 cigarettes a day or more for each age group except those aged 65 years and older. Men were also more likely to smoke fewer than 5 cigarettes per day than women, for each age group except those aged 65-74 years, with age-adjusted percentages of 12% and 8% respectively.

***Table 3.11: Average number of cigarettes smoked per day among smokers by gender and age***

| Gender and age | Total | Average cigarettes smoked per day (%) | | | | |
|---|---|---|---|---|---|---|
| | | 1-4 | 5-9 | 10-14 | 15-19 | 20+ |
| **Males** | | | | | | |
| 18-24 | 120 | 16.7 | 17.5 | 29.2 | 15.8 | 20.8 |
| 25-34 | 133 | 12.0 | 15.8 | 27.1 | 12.0 | 33.1 |
| 35-44 | 137 | 11.7 | 9.5 | 22.6 | 16.8 | 39.4 |
| 45-54 | 83 | 8.4 | 8.4 | 10.8 | 14.5 | 57.8 |
| 55-64 | 61 | 14.8 | 14.8 | 23.0 | 8.2 | 39.3 |
| 65-74 | 46 | 6.5 | 15.2 | 32.6 | 19.6 | 26.1 |
| 75+ | 23 | 17.4 | 8.7 | 43.5 | 13.0 | 17.4 |
| ***All males**** | ***603*** | ***12.2*** | ***12.8*** | ***24.7*** | ***14.2*** | ***36.0*** |
| **Females** | | | | | | |
| 18-24 | 86 | 9.3 | 33.7 | 23.3 | 15.1 | 18.6 |
| 25-34 | 130 | 8.5 | 12.3 | 32.3 | 19.2 | 27.7 |
| 35-44 | 120 | 5.8 | 12.5 | 17.5 | 25.0 | 39.2 |
| 45-54 | 97 | 6.2 | 13.4 | 17.5 | 22.7 | 40.2 |
| 55-64 | 86 | 10.5 | 4.7 | 25.6 | 20.9 | 38.4 |
| 65-74 | 50 | 14.0 | 14.0 | 20.0 | 24.0 | 28.0 |
| 75+ | 23 | 4.4 | 17.4 | 30.4 | 21.7 | 26.1 |
| ***All females**** | ***592*** | ***8.1*** | ***15.5*** | ***23.7*** | ***21.2*** | ***31.6*** |

* Age-standardised percent

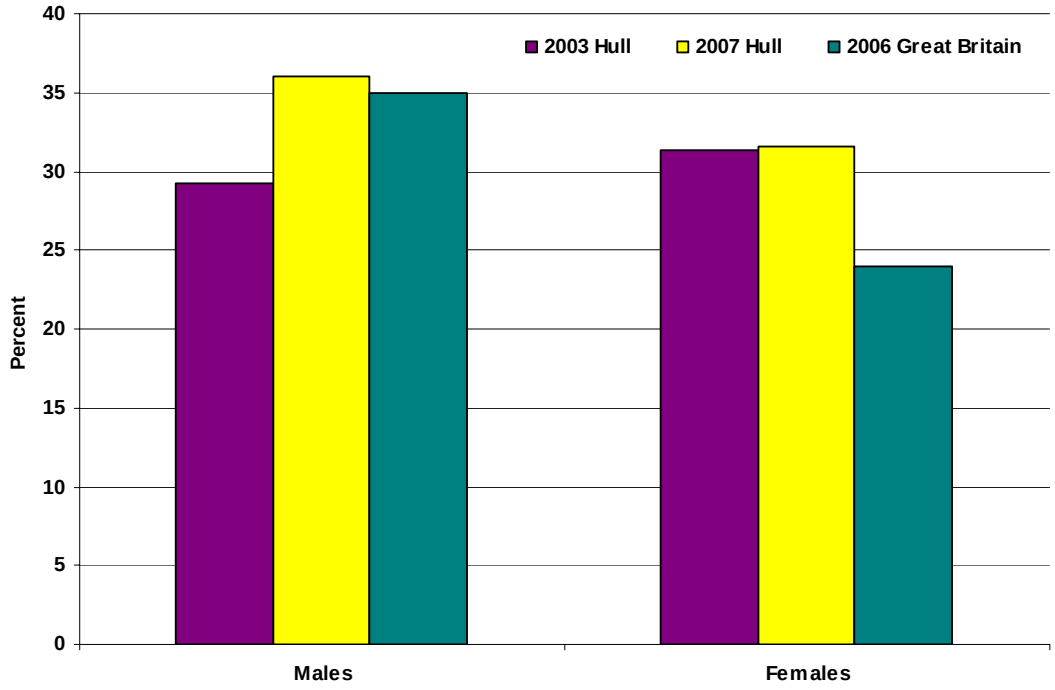
***Table 3.12*** and ***Figure 3.12*** show the age-standardised percentages by average number of cigarettes smoked per day, with comparisons to the 2003 survey. There was a 23% increase in the percentage of male smokers smoking heavily (20 or more cigarettes per day) to 36%. Alongside this, though, there were also increases in the percentages of light smokers (16% increase in those smoking less than 5 cigarettes a day; 8% increase in those smoking 5-9 cigarettes a day). None of the changes between 2007 and 2003 were statistically significant.

***Table 3.12: Average number of cigarettes smoked per day among smokers by gender, comparing 2007 and 2003 surveys and Great Britain 2006[11] (age-standardised percentages*)***

| | | Average cigarettes smoked per day (%) | | | | |
|---|---|---|---|---|---|---|
| | **Total** | **1-4** | **5-9** | **10-14** | **15-19** | **20+** |
| ***Males*** | | | | | | |
| 2003 survey | 228 | 10.5 | 11.8 | 31.9 | 16.6 | 29.2 |
| 2007 survey | 603 | 12.2 | 12.8 | 24.7 | 14.2 | 36.0 |
| 2006 Great Britain | | | | | | 35 |
| ***Females*** | | | | | | |
| 2003 survey | 271 | 13.8 | 12.1 | 30.3 | 12.4 | 31.4 |
| 2007 survey | 592 | 8.1 | 15.5 | 23.7 | 21.2 | 31.6 |
| 2006 Great Britain | | | | | | 24 |

*Age-standardised to England 2001 population, while Hull 2007 population was used for Hull

***Figure 3.12: Percentage of smokers smoking at least 20 cigarettes per day on average by gender, comparing 2007 and 2003 Hull surveys with Great Britain 2006[11]***




Among females there was little change in the percentage of heavy smokers. However, there was a 71% increase in the percentage of smokers smoking 15-19 cigarettes per day to 21%. Despite their different smoking patterns the median[12] number of cigarettes smoked per day was 15 for both male and female smokers (compared with 15 and 14 respectively in 2003). The proportion of heavy smokers in Hull is still considerably higher than for Great Britain among women (32% higher), but similar in men. The increase in

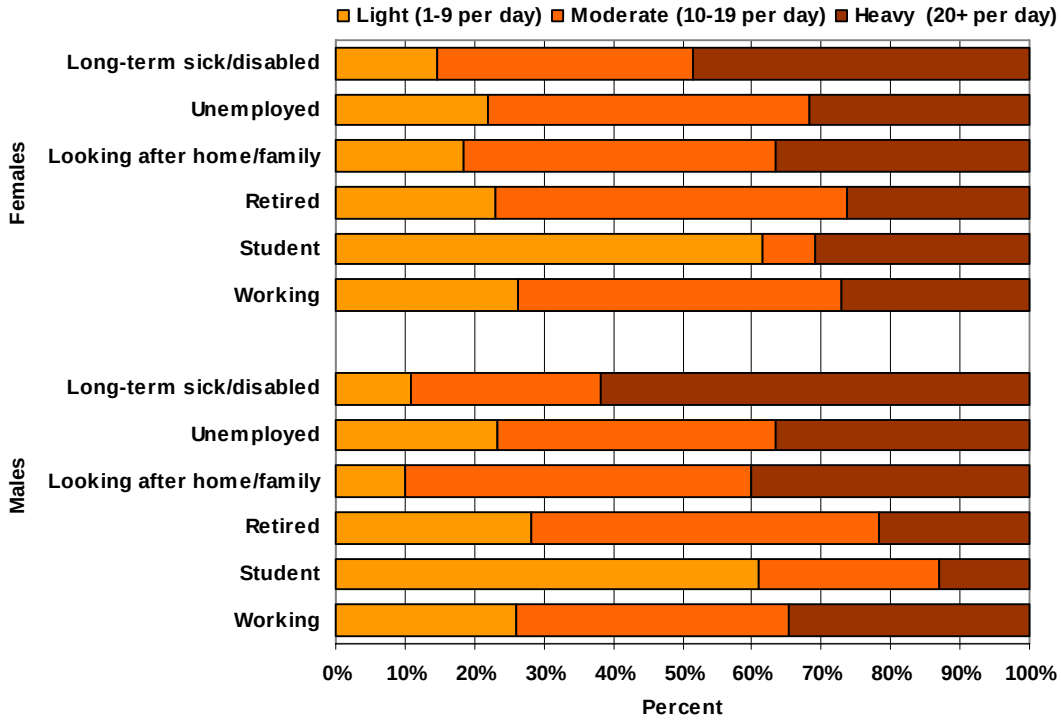
[11] General Household Survey 2006, Office for National Statistics, adults defined as 16+
[12] See the ***Appendix*** on ***page 101*** for the definition of a median

women smoking 15-19 cigarettes per day was the only change from 2003 among women that was statistically significant.

### 3.2.2 Employment status

***Figure 3.13*** and ***Table 3.13*** compare the percentages of smokers who are heavy (20 or more cigarettes per day), moderate (10-19 cigarettes per day) or light (under 10 cigarettes per day) smokers, by employment status and gender. Crude and age-standardised percentages are presented in ***Table 3.13*** as the age-standardisation process distorts the prevalence considerably, due to employment status being related to age.

***Figure 3.13: Average daily cigarette consumption by employment status and gender (crude percent)***




The largest crude percentages of heavy smokers were found in the long-term sick/disabled, amongst whom 62% of male and 49% of female smokers smoked 20 or more cigarettes per day. In general, smokers who were not working due to unemployment, long-term sickness/disability, or looking after home/family had a higher proportion of heavy smokers than those in employment and the retired. Male and female students that smoked had very different percentages of heavy smokers, but the small number of smoking students among survey respondents means these figures may not be reliable.

Excluding students, retired smokers had the lowest crude percentage of heavy smokers among men whilst among women the percentage of heavy

smokers among the retired was similar to those in work. Half of retired smokers smoked between 10 and 19 cigarettes per day. Working men who smoked were more likely to be heavy smokers than working women who smoked (35% versus 27%). Students were the most likely smokers to smoke less than 10 cigarettes a day, but as only 23 students that smoked provided information on the number of cigarettes they smoked each day, these estimates may not be reliable.

***Table 3.13: Average daily cigarette consumption by employment status and gender (age-standardised percent)***

| | Average daily cigarette consumption (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | Light (1-9) | | Moderate (10-19) | | Heavy (20+) | |
| | | Crude | Agest | Crude | Agest | Crude | Agest |
| ***Males*** | | | | | | | |
| Working | 352 | 26.1 | 23.3 | 39.2 | 36.0 | 34.7 | 34.2 |
| Student | 23 | 60.9 | 34.2 | 26.1 | 11.4 | 13.0 | 8.7 |
| Retired | 78 | 28.2 | 10.0 | 50.0 | 29.0 | 21.8 | 6.8 |
| Looking after home/family | 10 | 10.0 | 6.7 | 50.0 | 22.1 | 40.0 | 22.1 |
| Unemployed* | 82 | 23.2 | 19.7 | 40.2 | 36.3 | 36.6 | 37.4 |
| Long-term sick/disabled | 55 | 10.9 | 8.3 | 27.3 | 22.7 | 61.8 | 62.5 |
| ***Females*** | | | | | | | |
| Working | 252 | 26.2 | 23.4 | 46.8 | 42.4 | 27.0 | 23.5 |
| Student | 13 | 61.5 | 28.2 | 7.7 | 9.0 | 30.8 | 13.6 |
| Retired | 87 | 23.0 | 7.7 | 50.6 | 17.3 | 26.4 | 24.3 |
| Looking after home/family | 126 | 18.3 | 21.9 | 45.2 | 37.3 | 36.5 | 30.0 |
| Unemployed* | 41 | 22.0 | 19.0 | 46.3 | 46.3 | 31.7 | 34.7 |
| Long-term sick/disabled | 68 | 14.7 | 9.9 | 36.8 | 49.6 | 48.5 | 29.8 |

*Includes those on a government training scheme

### 3.2.3 Deprivation

***Figure 3.14*** and ***Table 3.14*** display the age-standardised percentages by deprivation quintile and average daily consumption of cigarettes. Among men, the two most deprived quintiles had the highest proportions of heavy smokers (although slightly higher in the second most deprived quintile at 42%), which then decreased as deprivation decreased to 26% in the least deprived quintile. The least deprived quintile had the largest proportion of moderate (10-19 cigarettes a day) smokers at 46%, and together with the second least deprived quintile the largest proportion of light (under 10 cigarettes a day) smokers at 28%. There were no significant differences between the most deprived quintile (or the least deprived quintile) and other quintiles in terms of whether the smoker was a heavy, moderate or light smoker. The median number of cigarettes smoked per day in the least deprived quintile was 10, compared with 15 in the two most deprived quintiles, although it was 14 in the second least deprived quintile.

***Figure 3.14: Average number of cigarettes smoked per day among smokers by deprivation quintile (age-standardised percent)***

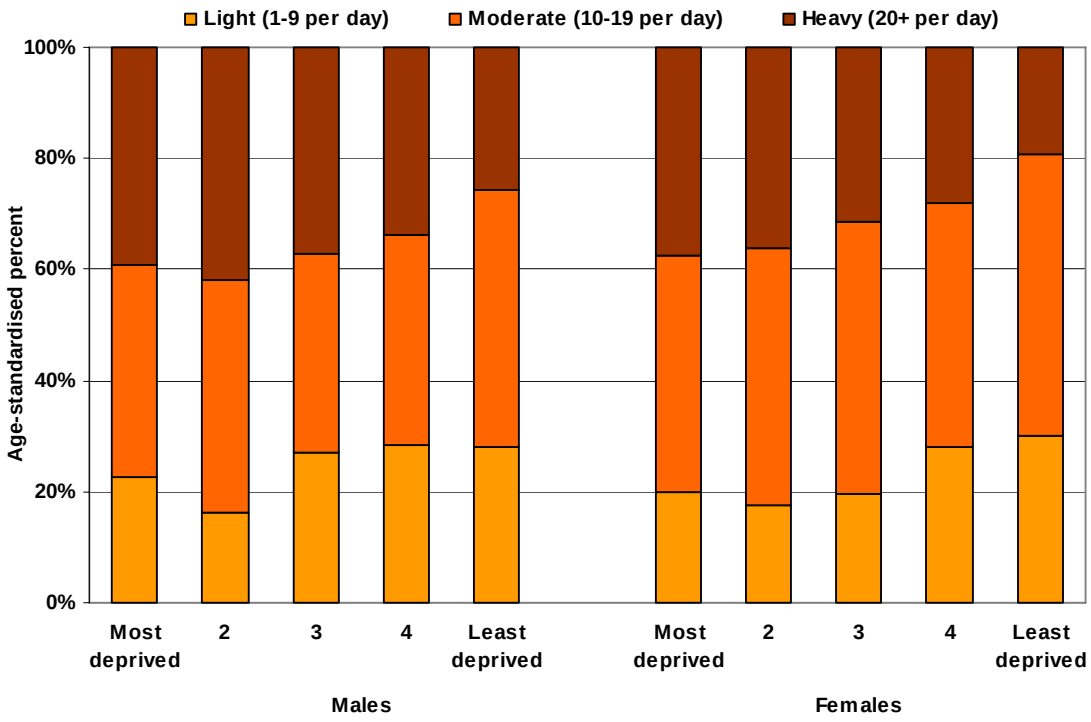



***Table 3.14: Average number of cigarettes smoked per day among smokers by deprivation quintile (age-standardised percent)***

| Deprivation quintile | Total | Average cigarettes smoked per day (%) | | |
|---|---|---|---|---|
| | | Light (1-9) | Moderate (10-19) | Heavy (20+) |
| **Males** | | | | |
| Most deprived | 141 | 22.8 | 38.0 | 39.2 |
| 2 | 118 | 16.1 | 42.1 | 41.8 |
| 3 | 116 | 27.0 | 36.0 | 37.0 |
| 4 | 116 | 28.4 | 37.8 | 33.7 |
| Least deprived | 79 | 28.1 | 46.3 | 25.6 |
| **Females** | | | | |
| Most deprived | 154 | 19.8 | 42.8 | 37.4 |
| 2 | 101 | 17.5 | 46.5 | 36.0 |
| 3 | 97 | 19.5 | 49.2 | 31.3 |
| 4 | 144 | 27.9 | 44.3 | 27.9 |
| Least deprived | 87 | 30.2 | 50.5 | 19.3 |

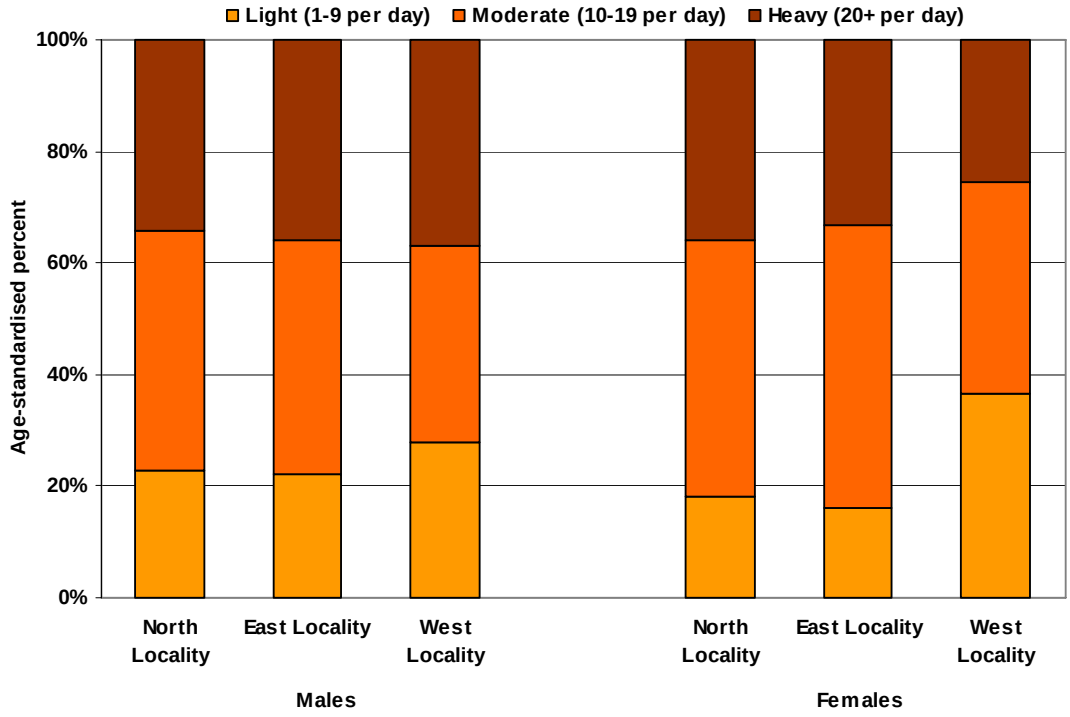
Among women, there was a clear trend to heavier smoking as deprivation increased. 19% of smokers from the least deprived quintile smoked heavily rising to 37% in smokers from the most deprived quintile (almost double the percentage in the least deprived quintile, and statistically significant). The least deprived quintile also had the highest proportion of smokers that were light smokers at 30% which was 50% higher than in the most deprived quintile, although not statistically significant. There were no other significant

differences between the most deprived quintile (or the least deprived quintile) and other quintiles in terms of whether the smoker was a heavy, moderate or light smoker. The median number of cigarettes smoked per day in the least deprived quintile was 13.5, compared with 15 in each other quintile except the middle quintile where it was 12.5.

### 3.2.4 Geographical variations

***Figure 3.15*** shows the number of cigarettes smoked per day on average by locality of residence (age-standardised percentages), whilst ***Table 3.15*** shows the number of cigarettes smoked per day on average by Area Committee Area and locality of residence (age-standardised percent). Amongst men the largest percentage of heavy smokers geographically were in West locality (37% smoking 20 or more cigarettes per day), as was the largest percentage of light (less than 10 a day) smokers (28%). However, the Area Committee Area with the largest proportion of heavy smoking males was Park (44%).

***Figure 3.15: Average number of cigarettes smoked per day among smokers in Hull by locality of residence (age-standardised percent)***




Despite North locality having the highest age-standardised smoking prevalence, it had the lowest age-standardised percentage of heavy smokers amongst men.

Amongst female smokers, those resident in North locality were the heaviest smokers (36% smoking at least 20 a day), with the largest percentage of heavy smokers found in North Carr (43%). North locality was the only locality

in which the age-standardised percentage of heavy smokers in women exceeded that in men (by 5%). At Area Committee Area level there were more heavy smokers among women than men in North Carr (16% higher) and East (23% higher). The largest percentage of light smoking women was found in West Area Committee Area and West locality (37% in each). There were no statistically significant differences in the percentages of light, moderate and heavy smokers between the localities and Hull overall, nor between area committee areas and Hull, with the exception of East area committee area, where the percentage of light smoking women was around half the equivalent Hull percentage.

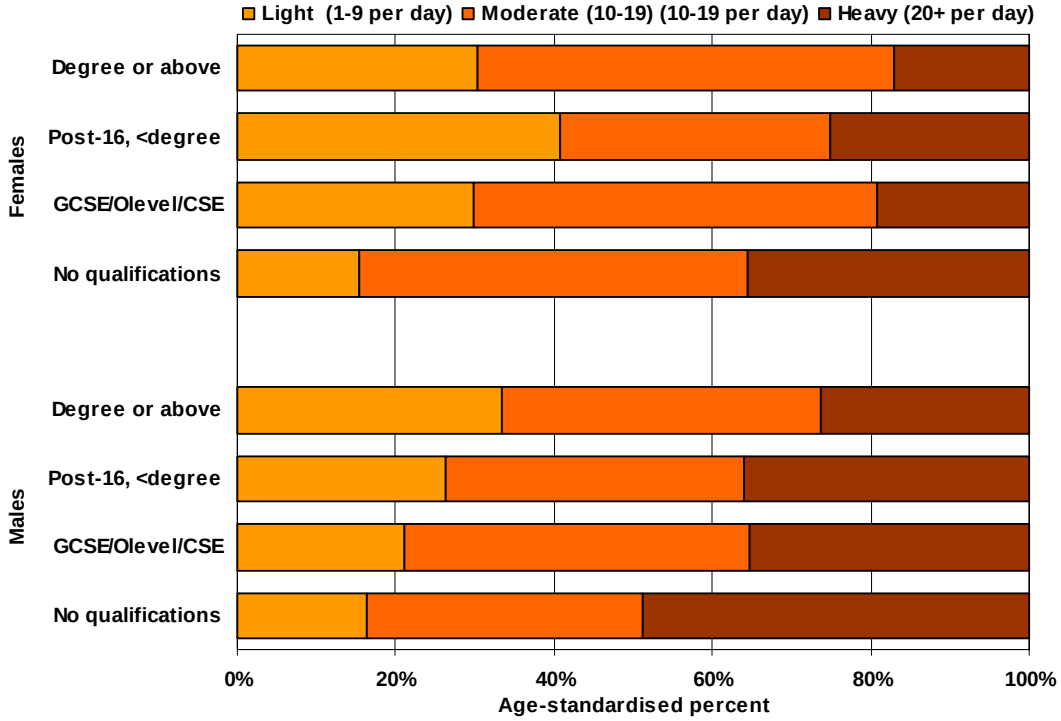
***Table 3.15: Average number of cigarettes smoked per day among smokers by area committee area and locality (age-standardised percent)***

| Area committee area/locality | Total | Average cigarettes smoked per day (%) | | |
|---|---|---|---|---|
| | | Light (1-10) | Moderate (10-19) | Heavy (20+) |
| **Males** | | | | |
| North Carr | 42 | 12.3 | 50.5 | 37.2 |
| Northern | 82 | 26.9 | 39.3 | 33.8 |
| **North Locality** | **124** | **22.8** | **42.9** | **34.3** |
| East | 82 | 24.3 | 47.6 | 28.1 |
| Park | 98 | 16.6 | 39.5 | 43.9 |
| Riverside (East) | 23 | 27.7 | 23.1 | 42.7 |
| **East Locality** | **203** | **22.0** | **42.0** | **36.0** |
| Riverside (West) | 117 | 26.2 | 32.8 | 41.1 |
| West | 62 | 29.0 | 37.8 | 33.2 |
| Wyke | 97 | 27.6 | 37.5 | 34.9 |
| **West Locality** | **276** | **27.9** | **35.2** | **36.9** |
| ***Hull*** | ***603*** | ***25.1*** | ***38.9*** | ***36.0*** |
| **Females** | | | | |
| North Carr | 52 | 19.3 | 37.4 | 43.3 |
| Northern | 103 | 18.3 | 50.0 | 31.8 |
| **North Locality** | **155** | **18.1** | **45.9** | **36.0** |
| East | 84 | 12.2 | 53.1 | 34.7 |
| Park | 96 | 20.0 | 48.3 | 31.7 |
| Riverside (East) | 30 | 24.9 | 58.6 | 16.5 |
| **East Locality** | **210** | **16.0** | **50.7** | **33.2** |
| Riverside (West) | 74 | 32.1 | 34.5 | 33.5 |
| West | 75 | 36.7 | 37.7 | 25.6 |
| Wyke | 78 | 33.6 | 48.4 | 18.0 |
| **West Locality** | **227** | **36.7** | **37.9** | **25.4** |
| ***Hull*** | ***592*** | ***23.6*** | ***44.8*** | ***31.6*** |

### 3.2.5 Educational attainment

***Figure 3.16*** and ***Table 3.16*** present the age-standardised percentages of the number of cigarettes smoked by smokers, broken down by the highest educational qualifications achieved. Among men the lowest percentage smoking heavily (20 or more cigarettes per day) was in those educated to degree level or higher at 26%. One third more men with qualifications below degree level were heavy smokers (35-36%), while 85% more men with no qualifications were heavy smokers (49%). One third of male smokers qualified to degree level or higher were light smokers, higher than all other groups and twice as high as men with no qualifications. None of the differences between those with no qualifications and other groups were statistically significant.

***Figure 3.16: Average number of cigarettes smoked per day by educational achievement and gender (age-standardised percent)***




Among female smokers, again those educated to degree level or higher had the lowest percentage of heavy smokers (17%), followed by those educated to GCSE level or equivalent (19%), both being statistically significantly lower than in women with no qualifications, at 36% almost twice as high; while 22% of those educated beyond the age of 16 years, but below degree level were heavy smokers. The largest percentage of light smokers was found in those educated beyond the age of 16 years, but below degree level (36.5%), while the lowest percentage was found in those with no qualifications (15%).

***Table 3.16: Average number of cigarettes smoked per day by educational achievement and gender (age-standardised percent)***

| | Total | Average cigarettes smoked per day (%) | | |
|---|---|---|---|---|
| | | Light (1-9) | Moderate (10-19) | Heavy (20+) |
| **Males** | | | | |
| No qualifications | 176 | 16.4 | 34.7 | 48.9 |
| GCSE/Olevel/CSE | 158 | 21.2 | 43.6 | 35.3 |
| Post-16, <degree | 122 | 26.3 | 37.6 | 36.1 |
| Degree or above | 79 | 33.3 | 40.3 | 26.4 |
| **Females** | | | | |
| No qualifications | 218 | 15.4 | 48.9 | 35.6 |
| GCSE/Olevel/CSE | 190 | 29.8 | 51.0 | 19.2 |
| Post-16, <degree | 63 | 36.5 | 30.4 | 22.4 |
| Degree or above | 55 | 30.3 | 52.8 | 17.0 |

## *3.3 Impact of stopping smoking on health*

This question was included in the health and lifestyle survey for the first time in 2007. However, it was included in the 2004 social capital survey. Lack of knowledge about the health benefits of stopping smoking may be a barrier to the take-up of smoking cessation services, and may indicate that the health promotion message is not reaching its intended audience. Hence differences in perceptions of the health impact of stopping smoking are examined here by smoking status

### 3.3.1 Gender and age

Perceptions on the health impact of stopping smoking by age, gender and smoking status are shown in ***Table 3.17*** as well as in ***Figure 3.17*** (men) and ***Figure 3.18*** (women). For each gender, and for both smokers and non-smokers, the age-group with the lowest percentage that perceived there to be a very big health impact upon stopping smoking were those aged 75 years and older. In this age group the percentage of male smokers who perceived there to be a very big health impact was barely half the percentage in women.

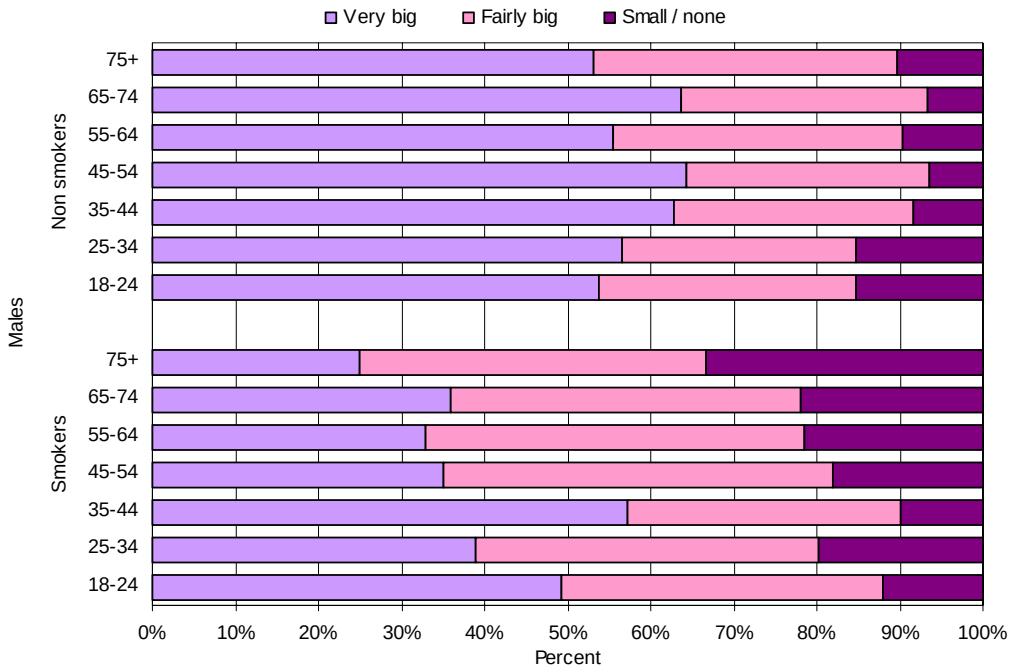
Among smokers 49% of males aged 18-24 years felt there would be a very big impact compared with 54% of females of this age. Among non-smokers the corresponding figures were 54% and 63% for males and females respectively. The largest percentage of male smokers that believed stopping smoking would have a very big health impact were those aged 35-44 years (57%), falling to around a third of male smokers aged 45-74, and a quarter in those aged 75+.

***Table 3.17: Perceived health impact of stopping smoking by age, gender and smoking status***

| | Perceived health impact of stopping smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Total | Very big | Small / none | Total | Very big | Small / none |
| **Smokers** | | | | | | |
| 18-24 | 124 | 49.2 | 12.1 | 90 | 54.4 | 7.8 |
| 25-34 | 136 | 39.0 | 19.8 | 136 | 65.4 | 8.8 |
| 35-44 | 143 | 57.3 | 9.8 | 123 | 74.8 | 7.3 |
| 45-54 | 94 | 35.1 | 18.1 | 99 | 67.7 | 5.0 |
| 55-64 | 70 | 32.9 | 21.5 | 84 | 48.8 | 7.2 |
| 65-74 | 50 | 36.0 | 22.0 | 48 | 52.1 | 25.0 |
| 75+ | 24 | 25.0 | 33.3 | 21 | 47.6 | 14.3 |
| All* | 641 | 41.5 | 17.7 | 601 | 60.5 | 9.7 |
| **Non smokers** | | | | | | |
| 18-24 | 158 | 53.8 | 15.2 | 170 | 62.9 | 6.5 |
| 25-34 | 216 | 56.5 | 15.3 | 224 | 75.0 | 4.4 |
| 35-44 | 217 | 62.7 | 8.3 | 231 | 74.0 | 5.6 |
| 45-54 | 182 | 64.3 | 6.5 | 208 | 70.7 | 7.7 |
| 55-64 | 166 | 55.4 | 9.6 | 201 | 75.1 | 4.5 |
| 65-74 | 151 | 63.6 | 6.6 | 167 | 61.7 | 8.4 |
| 75+ | 124 | 53.2 | 10.4 | 114 | 59.6 | 13.1 |
| All* | 1,214 | 59.0 | 10.5 | 1,315 | 69.4 | 6.8 |

*Age-standardised percent

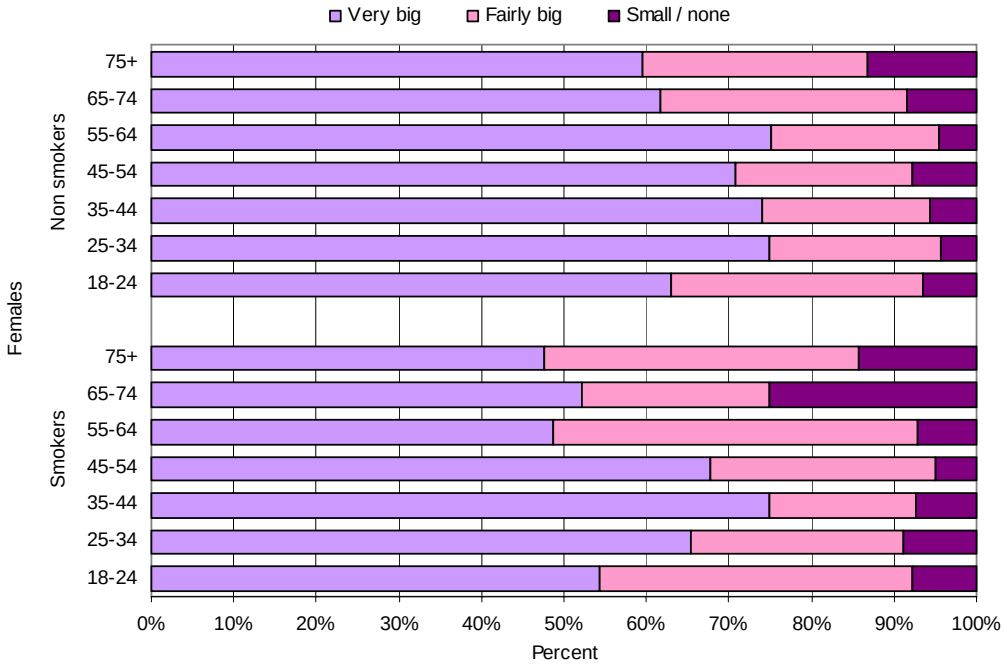
***Figure 3.17: Perceived health impact of stopping smoking in Hull males by age and smoking status***




The variations by age of perceptions of a very big health impact on stopping smoking were smaller among male non-smokers to smokers. Among non-

smokers the percentage that perceived there to be a very big health impact upon stopping smoking was higher in each age group than among smokers, with more than 50% of non-smoking men in each age-group perceiving the effect of stopping smoking on health to be very big. Overall, the age-adjusted percentage of male smokers that perceived there would be a very big effect on health upon stopping smoking (42%) was statistically significantly lower than among non-smoking males (59%). At the same time the age-adjusted percentage of male smokers perceiving the impact of stopping smoking to be small or none (33%) was statistically significantly higher than among non-smoking males (10%).

***Figure 3.18: Perceived health impact of stopping smoking in Hull females by age and smoking status***

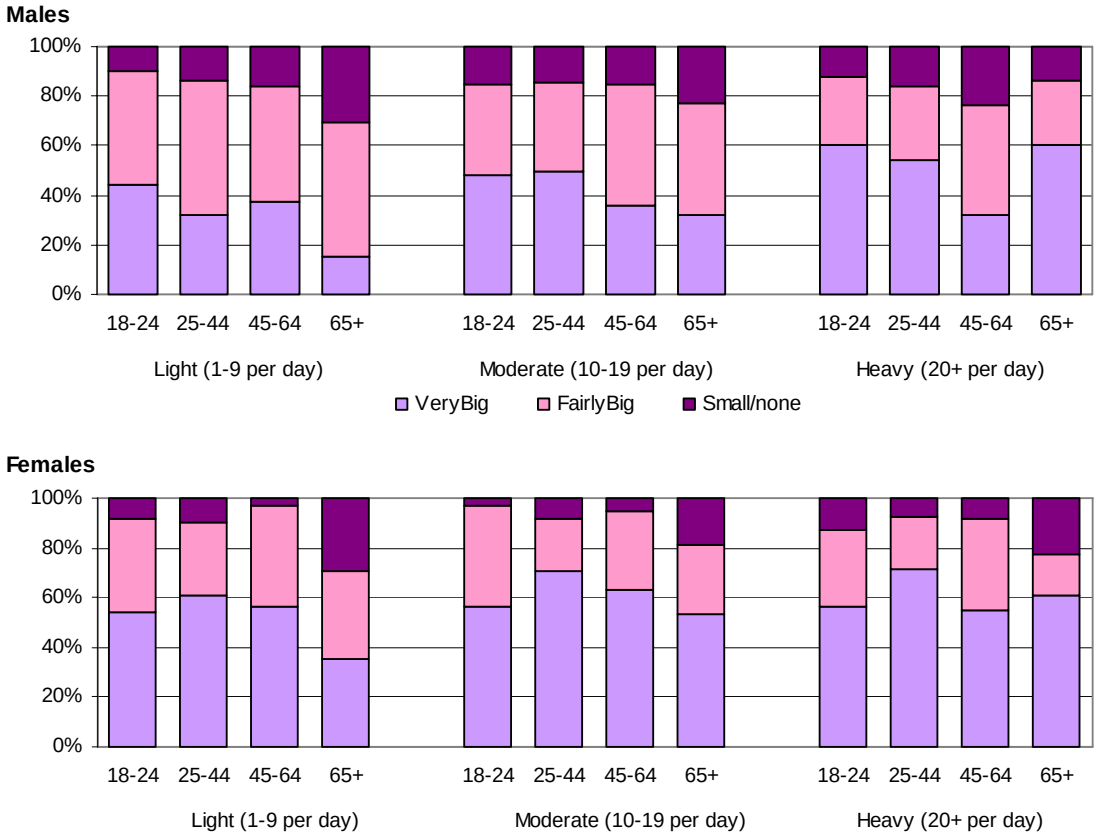



The patterns by age for female smokers were similar, although with larger percentages at each age perceiving a very big impact on health upon stopping smoking. A majority of female smokers in each age group perceived there to be a very big impact on health upon stopping smoking, with the exception of those aged 55-64 and 75+ years (49% and 48% respectively), with the highest percentage in those aged 35-44 years (75%). While the percentages who perceived there would be a very big effect on health upon stopping smoking were larger in non-smoking females than smoking females for most age groups, the differences were smaller than for men. The age-adjusted percentage perceiving a very big effect was larger in non-smoking females than smoking females, but the difference was not statistically significant.

The perceived health impact of stopping smoking by age, gender and the number of cigarettes smoked daily are shown in ***Figure 3.19*** and ***Table 3.18***.

Overall age-adjusted percentages perceiving there would be a very big impact on health upon stopping smoking were higher in heavy smoking men (50%) than in moderate or light smokers (43% and 34% respectively). Similarly in females overall age-adjusted percentages perceiving there would be a very big impact on health upon stopping smoking were higher in heavy smokers (63%) than light smokers (52%), although similar in moderate smokers.

***Figure 3.19: Perceived health impact of stopping smoking by age, gender and number of cigarettes smoked, smokers only***




There were no clear trends with age for either gender. Among men that were light or moderate smokers the young were more likely to perceive a very big impact than the old, while among heavy smokers the young and old were equally likely to do so. Higher percentages of women than men of each age group and level of smoking perceived there would be a very big impact on health upon stopping smoking at each age, except among heavy smokers aged 18-24 years where the relative positions were reversed. The overall, age-adjusted percentages perceiving there to be a very big impact on health upon stopping smoking were not statistically significantly different between heavy smokers and other smokers.

***Table 3.18: Perceived health impact of stopping smoking by age, gender and number of cigarettes smoked, smokers only***

| | Perceived health impact of stopping smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Total | Very big | Small / none | Total | Very big | Small / none |
| **Light smokers (1-9 per day)** | | | | | | |
| 18-24 | 41 | 43.9 | 9.7 | 37 | 54.1 | 8.1 |
| 25-44 | 65 | 32.3 | 13.8 | 49 | 61.2 | 10.1 |
| 45-64 | 32 | 37.5 | 15.7 | 30 | 56.7 | 3.3 |
| 65+ | 13 | 15.4 | 30.8 | 17 | 35.3 | 29.4 |
| All* | 151 | 33.6 | 15.6 | 133 | 52.1 | 11.8 |
| **Moderate smokers (10-19 per day)** | | | | | | |
| 18-24 | 54 | 48.1 | 14.9 | 32 | 56.3 | 3.1 |
| 25-44 | 104 | 50 | 14.5 | 117 | 70.9 | 8.5 |
| 45-64 | 39 | 35.9 | 15.4 | 78 | 62.8 | 5.1 |
| 65+ | 31 | 32.3 | 22.6 | 32 | 53.1 | 18.7 |
| All* | 228 | 43.1 | 16 | 259 | 62 | 9 |
| **Heavy smokers (20+ per day)** | | | | | | |
| 18-24 | 25 | 60 | 12 | 16 | 56.3 | 12.5 |
| 25-44 | 98 | 54.1 | 16.4 | 83 | 71.1 | 7.2 |
| 45-64 | 72 | 31.9 | 23.5 | 71 | 54.9 | 8.4 |
| 65+ | 15 | 60 | 13.4 | 18 | 61.1 | 22.2 |
| All* | 210 | 49.8 | 18.6 | 188 | 62.7 | 10.4 |

*Age-standardised percent

### 3.3.2 Employment status

***Table 3.19*** shows the perceived health impact of stopping smoking (age-standardised percentages) by smoking status, gender and employment status. The patterns here are not clear. Among smokers, the percentages of women perceiving a very big health impact were higher than for men, for each employment category. Among non-smokers a higher percentage of men who were students or retired perceived there to be a very big health impact than did women who were students or retired.

Among men (excluding students) more non-smokers than smokers perceived there to be a very big health impact, statistically significantly so for men who were working. Among women the differences between smokers and non-smokers were smaller. There were few differences between smoking and non-smoking female students, and among women who were unemployed the percentage perceiving a very big health impact from stopping smoking was lower among non-smokers than smokers. None of the differences between smoking and non-smoking women were statistically significant.

While the percentages perceiving the health impact of stopping smoking to be small or non-existent were generally low, more than 1 in 7 men of working age who were not students felt there would only be a small or no effect. These percentages decreased in non-smoking men, with the exception of

unemployed men, where they were little changed. Among women the percentages perceiving the health impact of stopping smoking to be small or non-existent were generally lower than in men (students, where numbers overall were small, being the only exception). As in men, for most employment categories the percentages of women perceiving the health impact of stopping smoking to be small or non-existent were higher in smokers than non-smokers with the exception of women who were retired or unemployed.

***Table 3.19: Perceived health impact of stopping smoking by employment status (age-standardised percentage)***

| Smoking status and employment status | Perceived health impact of stopping smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Total | Very big | Small / none | Total | Very big | Small / none |
| **Smokers** | | | | | | |
| Working | 375 | 40.5 | 14.2 | 257 | 54.7 | 7.1 |
| Student | 23 | 37.2 | 3.9 | 15 | 40.7 | 5.1 |
| Retired | 82 | 25.8 | 7.4 | 83 | 31.9 | 5.3 |
| Looking after home/family | 12 | 19.2 | 21.5 | 129 | 58.7 | 8.8 |
| Unemployed* | 83 | 37.6 | 16.2 | 40 | 67.6 | 7.1 |
| Long-term sick/disabled | 61 | 41.0 | 17.5 | 70 | 54.6 | 7.4 |
| **Non-smokers** | | | | | | |
| Working | 715 | 57.6 | 9.4 | 630 | 62.6 | 5.7 |
| Student | 27 | 46.7 | 1.2 | 64 | 39.9 | 2.4 |
| Retired | 302 | 62.2 | 9.6 | 327 | 56.8 | 7.9 |
| Looking after home/family | 16 | 70.4 | 4.1 | 176 | 80.7 | 2.9 |
| Unemployed* | 84 | 52.4 | 16.6 | 68 | 61.8 | 10.3 |
| Long-term sick/disabled | 62 | 59.4 | 12.8 | 39 | 65.3 | 5.0 |

*Includes those on a government training scheme

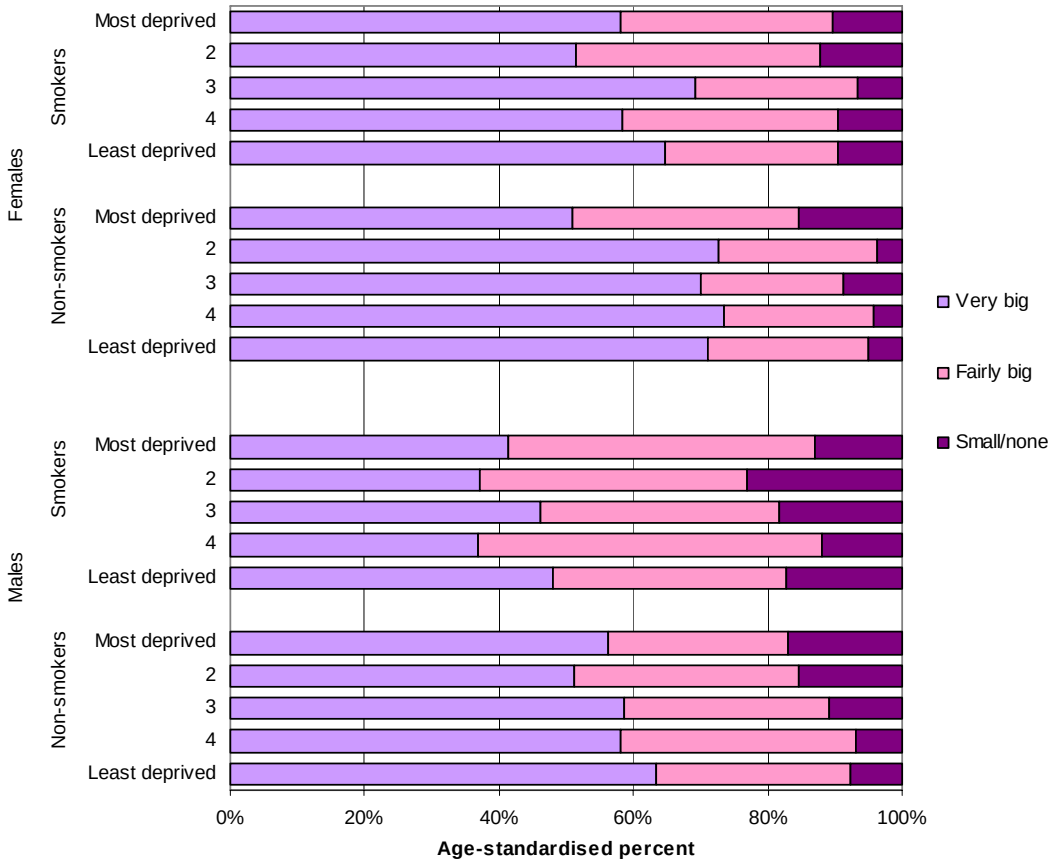
### 3.3.3 Deprivation

***Figure 3.20*** and ***Table 3.20*** present the perceived health impact of stopping smoking (age-standardised percent) by smoking status, gender and deprivation quintile. The patterns with deprivation were not clear. Among men the least deprived quintile had the largest percentage of both smokers and non-smokers who perceived there would be a very big impact, while the second most deprived quintile had the lowest percentage doing so. Among women the middle quintile of smokers had the largest percentage perceiving a very big impact while the second most deprived quintile had the lowest percentage feeling this. By contrast, among non-smoking women the most deprived quintile had the lowest percentage perceiving a very big health impact of stopping smoking (51%), compared with more than 70% in each of the other quintiles.

In general higher percentages of women than men perceived there would be a very big impact on health upon stopping smoking, with the only exception non-smokers in the most deprived quintile. Non-smokers were more likely to

perceive there would be a very big impact on health from stopping smoking than smokers, again with the exception of women in the most deprived quintile. The only statistically significant difference in those that perceived there would be a very big impact on health upon stopping smoking between smokers and non-smokers by deprivation quintile was seen for men in the most second least deprived quintile (58% more non-smokers than smokers).

***Figure 3.20: Perceived health impact of stopping smoking by deprivation quintile (Hull), gender and smoking status (age-standardised percent)***




Looking in more detail at the differences between deprivation quintiles, men in the most deprived quintile were not statistically significantly different from the men in other quintiles with one exception among non-smoking men: the percentage in the most deprived quintile perceiving a small or no impact of stopping smoking was more than double that in the second least deprived quintile. Among women, there were no statistically significant differences between the most deprived quintile and other quintiles among smokers. Among non-smokers, the percentage of women in the most deprived quintile perceiving there to be a very big effect on health from stopping smoking was statistically significantly lower (by around 30%) than women in the two least deprived quintiles; while the percentages perceiving there to be only a small or no effect was statistically significantly higher than women in the two least deprived quintiles, as well as in the second most deprived quintile.

***Table 3.20: Perceived health impact of stopping smoking by deprivation quintile (Hull), gender and smoking status (age-standardised percent)***

| | Perceived health impact of stopping smoking (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | |
| | Total | Very big | Fairly big | Small /none | Total | Very big | Fairly big | Small /none |
| **Smokers** | | | | | | | | |
| Most deprived | 152 | 41.4 | 45.5 | 13.1 | 151 | 58.0 | 31.7 | 10.3 |
| Quintile 2 | 124 | 37.2 | 39.8 | 23.0 | 101 | 51.5 | 36.4 | 12.1 |
| Quintile 3 | 124 | 46.3 | 35.6 | 18.1 | 102 | 69.3 | 24.2 | 6.6 |
| Quintile 4 | 122 | 36.8 | 51.3 | 11.9 | 145 | 58.4 | 32.1 | 9.4 |
| Least deprived | 87 | 48.1 | 34.6 | 17.3 | 92 | 64.6 | 25.8 | 9.6 |
| **Non-smokers** | | | | | | | | |
| Most deprived | 161 | 56.2 | 26.7 | 17.1 | 140 | 50.9 | 33.8 | 15.3 |
| Quintile 2 | 155 | 51.3 | 33.3 | 15.4 | 113 | 72.5 | 23.6 | 3.8 |
| Quintile 3 | 228 | 58.7 | 30.5 | 10.8 | 255 | 70.1 | 21.3 | 8.6 |
| Quintile 4 | 295 | 58.1 | 35.1 | 6.8 | 423 | 73.6 | 22.2 | 4.3 |
| Least deprived | 295 | 63.4 | 29.0 | 7.6 | 344 | 71.2 | 23.9 | 5.0 |

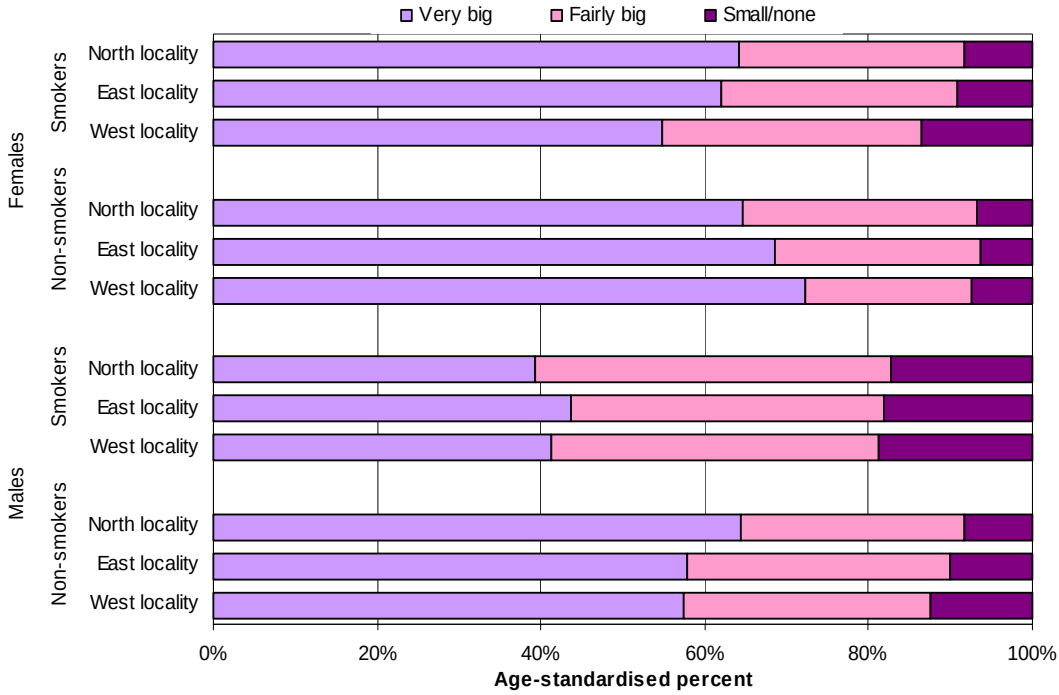
### 3.3.4 Area committee area and locality

***Figure 3.21*** shows the perceived health impact of stopping smoking by locality of residence, gender and smoking status (age-standardised percentages). Patterns by locality were different between genders. Among smokers North locality had the lowest percentage of men (39%), and the highest percentage of women (64%) who perceived there would be a very big impact on health upon stopping smoking; while among non-smokers North locality had the lowest percentage of women (65%) and the highest percentage of men (65%) who perceived there would be a very big impact on health upon stopping smoking.

For each locality, the percentages who perceived there would be a very big impact on health of stopping smoking were higher among non-smokers than smokers, statistically significantly so for men in North and West localities, and women in West locality. The percentages that perceived there would be a small, or no impact on health upon stopping smoking were higher in smokers than non-smokers, although the differences were not statistically significant, again for each locality and gender.

Differences between Area Committee Areas within each locality were often greater than differences between localities. The perceived impact on health upon stopping smoking by Area Committee Area and locality of residence are presented in ***Table 3.21***. The largest within-locality differences in the percentage that perceived there would be a very big impact on health upon stopping smoking were in North locality, ranging from 29% of male smokers and 49% of female smokers in North Carr to 45% of male smokers and 70% of female smokers in Northern.

***Figure 3.21: Perceived health impact of stopping smoking by locality of residence, gender and smoking status***




For each area committee area and locality the percentage of men that smoked who perceived there would be a very big health impact was much lower than the percentage of women from the same Area Committee Area that smoked, while the percentages that perceived there would be little or no health impact were higher among men than women, with the exception of Wyke. More than 1 in 4 men that smoked in North Carr perceived that there would be only a small or no effect on health upon stopping smoking, twice the percentage in women that smoked in North Carr.

For each area and locality, the percentage of non-smoking men that perceived there would be a very big effect on health upon stopping smoking was higher than the corresponding percentage among men that smoked. Among women this was also the case with the exception of Northern and Riverside (West). None of the differences between smokers and non-smokers at Area Committee Area level were statistically significant.

***Table 3.21: Perceived health impact of stopping smoking by area committee area and locality (age-standardised), males***

| Smoking status, area and locality | Perceived health impact of stopping smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Total | Very big | Small / none | Total | Very big | Small / none |
| **Smokers** | | | | | | |
| North Carr | 42 | 29.3 | 26.3 | 53 | 48.9 | 13.5 |
| Northern | 91 | 44.6 | 12.0 | 103 | 70.4 | 5.9 |
| **North Locality** | **133** | **39.3** | **17.3** | **156** | **64.2** | **8.3** |
| East | 82 | 46.4 | 21.4 | 87 | 62.1 | 8.1 |
| Park | 111 | 42.6 | 16.3 | 98 | 64.3 | 10.2 |
| Riverside (East) | 26 | 38.6 | 9.6 | 30 | 65.4 | 3.6 |
| **East Locality** | **219** | **43.6** | **18.1** | **215** | **62.0** | **9.2** |
| Riverside (West) | 121 | 35.0 | 23.5 | 74 | 48.6 | 20.3 |
| West | 65 | 45.1 | 16.4 | 77 | 63.6 | 5.1 |
| Wyke | 103 | 47.6 | 15.3 | 79 | 52.5 | 17.4 |
| **West Locality** | **289** | **41.2** | **18.7** | **230** | **54.7** | **13.6** |
| ***Hull*** | ***641*** | ***41.5*** | ***17.7*** | ***601*** | ***60.5*** | ***9.7*** |
| **Non-smokers** | | | | | | |
| North Carr | 77 | 58.3 | 15.9 | 92 | 73.4 | 4.1 |
| Northern | 160 | 67.5 | 3.6 | 138 | 61.4 | 7.7 |
| **North Locality** | **237** | **64.5** | **8.3** | **230** | **64.7** | **6.8** |
| East | 170 | 63.3 | 7.6 | 214 | 71.1 | 6.4 |
| Park | 227 | 52.6 | 11.9 | 241 | 68.6 | 4.7 |
| Riverside (East) | 65 | 60.7 | 10.5 | 88 | 63.5 | 8.9 |
| **East Locality** | **462** | **57.9** | **10.1** | **543** | **68.6** | **6.4** |
| Riverside (West) | 162 | 50.8 | 18.5 | 124 | 65.0 | 12.4 |
| West | 199 | 59.8 | 13.3 | 197 | 77.6 | 6.0 |
| Wyke | 154 | 61.6 | 6.6 | 221 | 71.1 | 6.4 |
| **West Locality** | **515** | **57.5** | **12.4** | **542** | **72.2** | **7.5** |
| ***Hull*** | ***1,214*** | ***59.0*** | ***10.5*** | ***1,315*** | ***69.4*** | ***6.8*** |

### 3.3.5 Educational attainment

The perceived impact on health upon stopping smoking are presented in ***Table 3.22***, by gender and highest educational qualification held (age-standardised percent). The patterns on perceived health impact upon stopping smoking by highest educational qualification are mixed. One quarter of male smokers with no qualifications perceived that there would be only a small, or no, impact on health upon stopping smoking, compared with 12% of male smokers educated to degree level or higher, and less than 10% of male smokers with other qualifications. Those with no qualifications also had the lowest percentage that perceived there would be a very big health impact among male smokers (37%). Conversely, in females it is this group that had the highest percentage that perceived there would be a very big health impact (62%). For each educational qualification category, among both men and women, higher percentages of non-smokers than smokers perceived that

there would be a very big health impact upon stopping smoking, although the differences were not statistically significant. Women were more likely to perceive a very big health impact upon stopping smoking than men for each group except those smokers educated beyond age 16 but below degree level (males 52%, females 43%).

***Table 3.22: Perceived health impact of stopping smoking by educational qualifications and gender (age-standardised percent)***

| Smoking status and highest educational qualification | Perceived health impact of stopping smoking (%) | | | | | |
|---|---|---|---|---|---|---|
| | Males | | | Females | | |
| | Total | Very big | Small / none | Total | Very big | Small / none |
| **Smokers** | | | | | | |
| No qualifications | 189 | 37.4 | 24.3 | 216 | 62.4 | 11.4 |
| GCSE/Olevel/CSE | 163 | 43.6 | 9.5 | 196 | 59.2 | 6.9 |
| Post-16,<degree | 129 | 51.6 | 8.0 | 66 | 43.1 | 4.4 |
| Degree or above | 82 | 47.1 | 11.6 | 56 | 52.5 | 13.8 |
| **Non-smokers** | | | | | | |
| No qualifications | 327 | 51.3 | 18.5 | 362 | 64.6 | 8.8 |
| GCSE/Olevel/CSE | 269 | 52.0 | 13.0 | 382 | 65.1 | 8.3 |
| Post-16,<degree | 274 | 65.5 | 5.6 | 176 | 70.0 | 1.9 |
| Degree or above | 194 | 63.3 | 6.8 | 204 | 66.3 | 8.1 |

### 3.3.6 Comparisons with other surveys

The question on the health impact of stopping smoking was previously asked in Hull in the 2004 social capital survey. The results from this question were reported by age in all respondents, and broken down further by gender in smokers only, again by age, with three categories of responses: very or fairly big effect; fairly small effect; and very small or no effect. These results from 2004 are displayed in this section, alongside equivalent results from 2007.

In 2007 between 86% and 92% of every age group perceived that stopping smoking would have a fairly big or very big health impact, with the lowest percentage seen in those aged 75 years and above (***Table 3.23***). These percentages had increased since 2004 for most age groups. The largest change was in the youngest age group which increased from 79% to 90% (although it should be noted that the larger age range in the 2004 survey (16-24) may have some effect here). The only age groups for which these percentages did not increase were those aged 25-34 and 75+ years, remaining the same in each case. The latter group had the lowest proportion in 2007, although the third highest in 2004, suggesting that the health promotion messages since 2004 may not have not been hitting this age group as effectively as other age groups, which may reflect that this group is not seen as a priority, as the targets on which the PCT are measured all tend to be in those aged under 75 years. The age-sex-standardised percentage

perceiving a very big or fairly big health impact increased between 2004 and 2007 by 5% to 90%, which was not a statistically significant increase.

***Table 3.23: Perceived health impact of stopping smoking by age (%), all respondents, comparing 2007 and 2004 Hull surveys***

| Health impact of stopping smoking | Age (years) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 18-24[1] | 25-34 | 35-44 | 45-54 | 55-64 | 65-75 | 75+ | All[2] |
| ***2007 health and lifestyle survey*** | | | | | | | | |
| Very/fairly big | 90 | 89 | 92 | 92 | 91 | 89 | 86 | 90 |
| Fairly small | 6 | 6 | 4 | 4 | 4 | 7 | 7 | 5 |
| Very small/none | 5 | 6 | 4 | 5 | 5 | 4 | 7 | 5 |
| ***2004 social capital survey*** | | | | | | | | |
| Very/fairly big | 79 | 89 | 89 | 84 | 84 | 83 | 86 | 85 |
| Fairly small | 17 | 7 | 7 | 12 | 12 | 12 | 9 | 11 |
| Very small/none | 4 | 4 | 4 | 3 | 4 | 5 | 5 | 4 |

1 Aged 16-24 for the 2004 social capital survey 2 Age-standardised percent

The perceived health impact upon stopping smoking in men that smoked in 2004 and 2007 are presented in ***Table 3.24*** and ***Figure 3.22***. Over this period there was a large increase in the percentage that perceived there would be a very big or fairly big health impact upon stopping smoking, with increases of between 13% and 47% by age group. The largest increases were in those aged 18-24 years (47%) and 65-74 years (37%). The fact that increases in the percentages that perceived that stopping smoking would have a very big or fairly big impact on health were found in each age group suggests that public health messages regarding smoking have been reaching at least some of the men that smoke of all ages, with few men that smoked in 2007 unaware of the impact of smoking on health. However despite this improvement, in 2007 more than one in eight male smokers aged either 55-64 years or 75 years and over still felt that the health impact of stopping smoking would be very small or non-existent. The age-standardised percentage of men that smoked that perceived stopping smoking would have a very big or fairly big health impact increased by more than a fifth to 82% in 2007, a statistically significant increase.

***Table 3.24: Perceived health impact of stopping smoking by age (%), male smokers, comparing 2007 and 2004 Hull surveys***

| Health impact of stopping smoking | Age (years) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 18-24[1] | 25-34 | 35-44 | 45-54 | 55-64 | 65-75 | 75+ | All[2] |
| ***2007 health and lifestyle survey*** | | | | | | | | |
| Very/fairly big | 88 | 80 | 90 | 82 | 79 | 78 | 67 | 82 |
| Fairly small | 9 | 13 | 4 | 6 | 9 | 16 | 21 | 10 |
| Very small/none | 3 | 7 | 6 | 12 | 13 | 6 | 13 | 8 |
| ***2004 social capital survey*** | | | | | | | | |
| Very/fairly big | 60 | 71 | 78 | 66 | 66 | 57 | 56 | 67 |
| Fairly small | 31 | 16 | 15 | 26 | 21 | 28 | 25 | 22 |
| Very small/none | 9 | 13 | 8 | 8 | 12 | 15 | 19 | 11 |

1 Aged 16-24 for the 2004 social capital survey 2 Age-standardised percent

***Figure 3.22: Percentage of respondents perceiving a very big or fairly big health impact on stopping smoking, male smokers, comparing 2007 and 2004 Hull surveys***

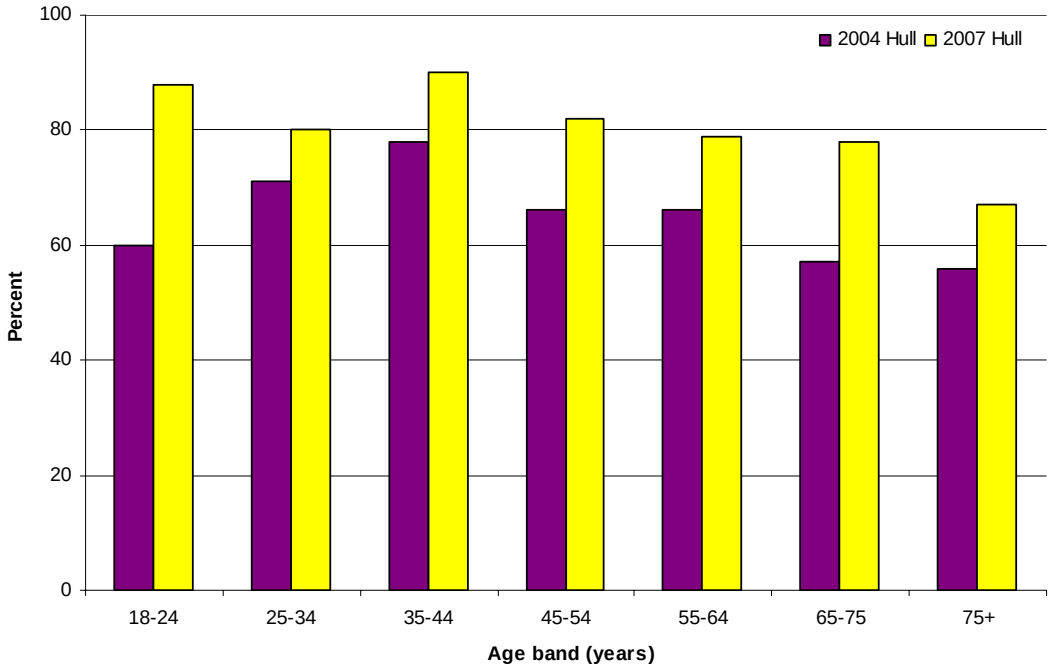


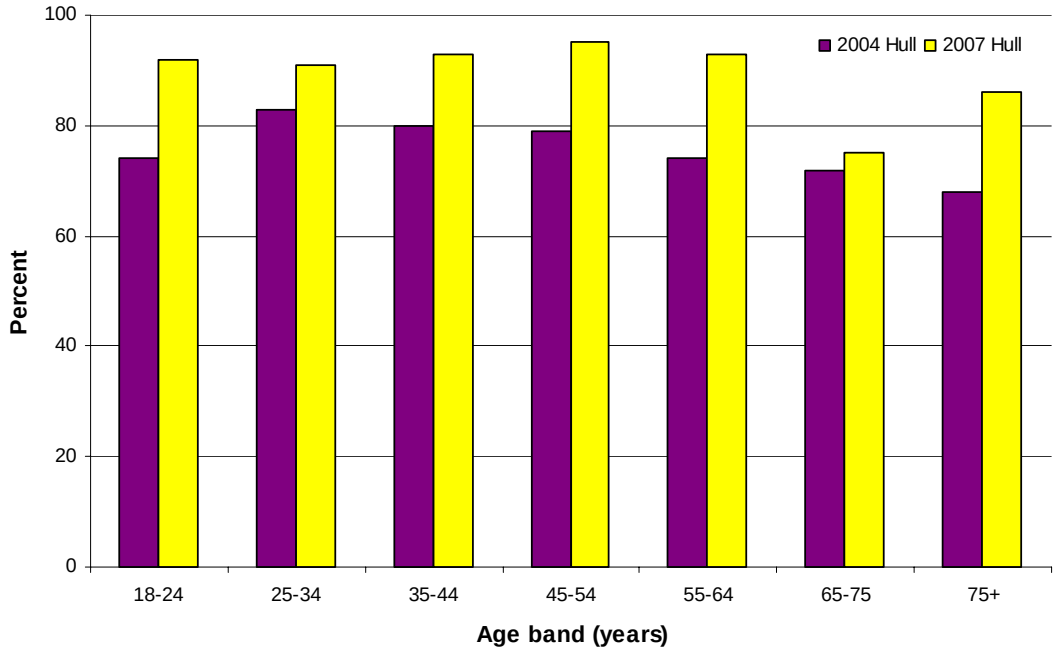

***Table 3.25*** and ***Figure 3.32*** present the same information for women. As can be seen, for most age groups there were higher percentages of women that smoked than men that smoked who perceived that there would be a very big or fairly big impact on health upon stopping smoking, in each survey, with only those aged 65-74 years in the 2007 survey being an exception. Again, the percentages with these perceptions increased from the 2004 social capital survey, in every age group, with increases ranging from 4% in those aged 65-74 years to 26% in those aged 75 years and above and those aged 55-64 years. The age-standardised percentage of women that smoked that perceived stopping smoking would have a very big or fairly big health impact increased by more than a sixth to 90%, a statistically significant increase.

***Table 3.25: Perceived health impact of stopping smoking by age (%), female smokers, comparing 2007 and 2004 Hull surveys***

| Health impact of stopping smoking | Age (years) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 18-24[1] | 25-34 | 35-44 | 45-54 | 55-64 | 65-75 | 75+ | All[2] |
| ***2007 health and lifestyle survey*** | | | | | | | | |
| Very/fairly big | 92 | 91 | 93 | 95 | 93 | 75 | 86 | 90 |
| Fairly small | 6 | 5 | 5 | 4 | 5 | 21 | 14 | 7 |
| Very small/none | 2 | 4 | 2 | 1 | 2 | 4 | 0 | 2 |
| ***2004 social capital survey*** | | | | | | | | |
| Very/fairly big | 74 | 83 | 80 | 79 | 74 | 72 | 68 | 77 |
| Fairly small | 20 | 12 | 12 | 16 | 22 | 23 | 23 | 18 |
| Very small/none | 6 | 5 | 8 | 5 | 4 | 4 | 10 | 6 |

1 Aged 16-24 for the 2004 social capital survey 2 Age-standardised percent

***Figure 3.23: Percentage of respondents perceiving a very big or fairly big health impact on stopping smoking, female smokers, comparing 2007 and 2004 Hull surveys***




## *3.4 Health in smokers*

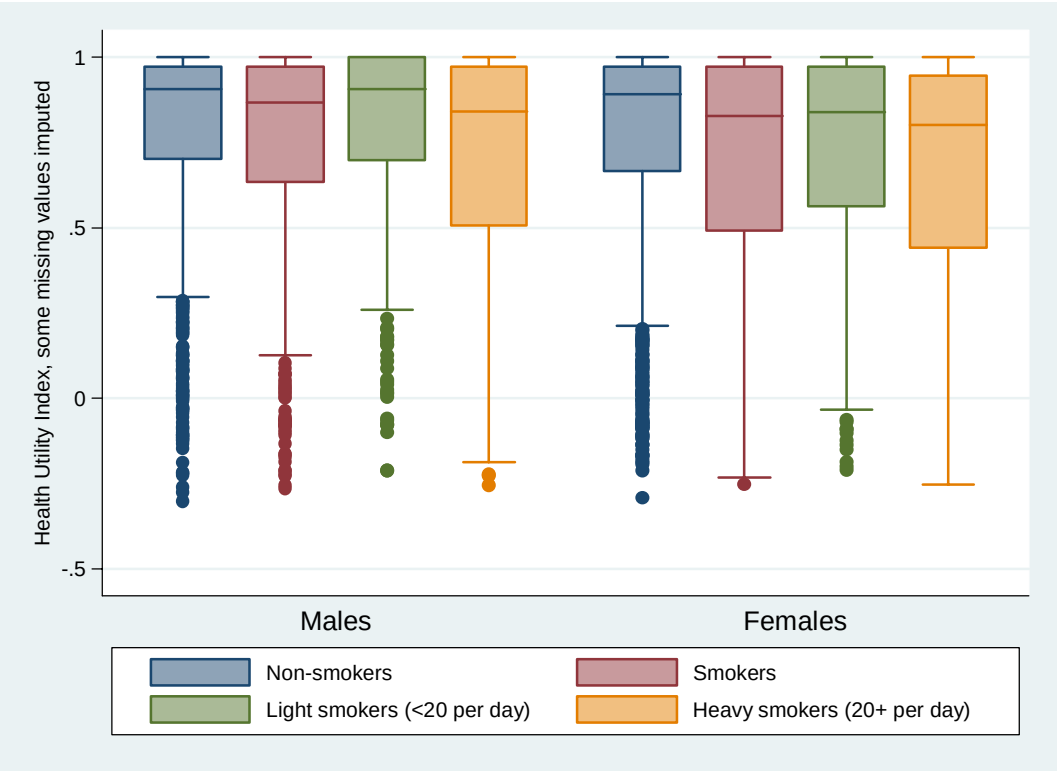
Several health measures were reported in the 2007 health and lifestyle survey. The Health Utilities Index (HUI) measures everyday living, the Mental Health Index (MHI) is the transformed (0-100) mental health scale from the SF-36. The health thermometers measured current health as did the health status question. For each of these three health measures a lower score denotes poorer health. They are examined here in relation to smoking status and average daily cigarette consumption

### 3.4.1 Health Utility Index

***Figure 3.24*** displays the box and whisker plots[13] for the HUI3 multi-attribute score by smoking status and gender. The median HUI3 scores in non-smokers were higher than for smokers, and the inter-quartile ranges were narrower. Within smokers, light smokers had higher median HUI scores than heavy smokers, again with smaller inter-quartile ranges. Within each smoking category, males had higher medians and tighter inter-quartile ranges than females.

[13] See the ***Appendix*** on ***page 104*** for an explanation of these plots

***Figure 3.24: Health utility index by smoking status and gender***




Health Utility Index scores can be grouped into categories of the degree to which daily activities are affected by health or disability[14]. These age standardised percentages are displayed in ***Table 3.26*** again by smoking status and gender. A clear association between smoking and the degree to which daily activities are affected by health or disability is apparent from this table. Among males, smokers had a statistically significantly higher percentage of respondents whose daily activities were the severely limited by health or disability (32%) than non smokers (23%), with those that had never smoked having the lowest percentage (19%). Heavy smokers had the highest percentage with daily activities severely limited by health or disability (38%).

The picture in females was similar. Again smokers had a statistically significantly higher percentage with daily activities severely limited by health or disability (38%) than did non-smokers (26%). As in men, those that had never smoked had the lowest percentage with daily activities severely limited by health or disability (22%), while the number of cigarettes smoked per day was also associated, with 32% of light smokers, 38% of moderate smokers and 41% of heavy smokers having their daily activities severely limited by health or disability, although these differences were not statistically significant.

[14] Feeney, D. The Health Utilities Index: A tool for Assessing Health Benefits. *Patient Reported Outcomes newsletter* **34**, Spring 2005
http://www.mapi-research.fr/pdf/newsletter/PRON34.pdf

***Table 3.26: Health Utility Index median scores plus degree to which daily activities are affected by health or disability by smoking status and gender (age-standardised percent)***

| Smoking status | Total | Degree to which daily activities are affected by health or disability (%) | | | | Median |
|---|---|---|---|---|---|---|
| | | None | Mild | Moderate | Severe | |
| ***Males*** | | | | | | |
| Never smoked | 747 | 31.1 | 29.7 | 20.1 | 19.1 | 0.93 |
| Former smoker | 531 | 19.9 | 27.8 | 23.5 | 28.9 | 0.80 |
| All non-smokers | 1,278 | 27.9 | 27.6 | 22.1 | 22.5 | 0.91 |
| All smokers | 647 | 20.2 | 27.0 | 20.7 | 32.1 | 0.87 |
| Light smoker | 155 | 22.0 | 31.2 | 18.9 | 28.0 | 0.92 |
| Moderate smoker | 237 | 22.5 | 27.7 | 21.9 | 27.9 | 0.91 |
| Heavy smoker | 207 | 16.3 | 24.4 | 21.2 | 38.2 | 0.84 |
| ***Females*** | | | | | | |
| Never smoked | 939 | 21.5 | 34.3 | 21.8 | 22.4 | 0.91 |
| Former smoker | 491 | 16.3 | 29.4 | 22.1 | 32.1 | 0.84 |
| All non-smokers | 1,430 | 19.8 | 32.7 | 21.9 | 25.6 | 0.83 |
| All smokers | 610 | 14.9 | 22.3 | 24.5 | 38.4 | 0.83 |
| Light smoker | 136 | 15.0 | 21.1 | 31.5 | 32.4 | 0.83 |
| Moderate smoker | 262 | 15.9 | 23.0 | 23.1 | 37.9 | 0.84 |
| Heavy smoker | 190 | 13.4 | 24.0 | 21.9 | 40.6 | 0.80 |

### 3.4.2 Mental Health Index

The Mental Health Index (MHI) is the transformed (0-100) mental health section of the SF-36. Respondents were asked about their feelings over the last 4 weeks. ***Figure 3.25*** illustrates the MHI by gender and smoking status. Within each smoking category, males had higher (i.e. better) median MHI, and narrower inter-quartile ranges. Within each gender, non-smokers had higher median MHI than smokers, and light smokers had higher MHI than heavy smokers.

Median values of the Mental Health Index by smoking status for each gender plus a categorisation of this index are displayed in ***Table 3.27***. It can be seen that, as with the HUI, non-smokers fared better (had a higher mental health score) than smokers. Among non-smokers, 27% of males and 17% of females scored 90-100, while among smokers it was 17% and 13% respectively for men and women, with the difference between smokers and non-smokers in males statistically significant. Heavy smokers had the lowest percentages scoring 90-100 at 14% and 12% respectively in men and women.

More than a quarter of heavy smoking men scored lower than 60, against 20% of all men who smoked and 12% of non-smoking men. Among women, smokers also had worse mental health than non-smokers 35% and 19% respectively scoring less than 60. In terms of the number of cigarettes smoked per day, light smokers fared as badly as heavy smokers (each had 37% scoring under 60). Amongst both men and women the percentage of

smokers with the worst MHI scores (0-49 and 50-59) was statistically significantly higher than for non-smokers.

***Figure 3.25: SF36 Mental Health Index transformed (0-100) by smoking status and gender***

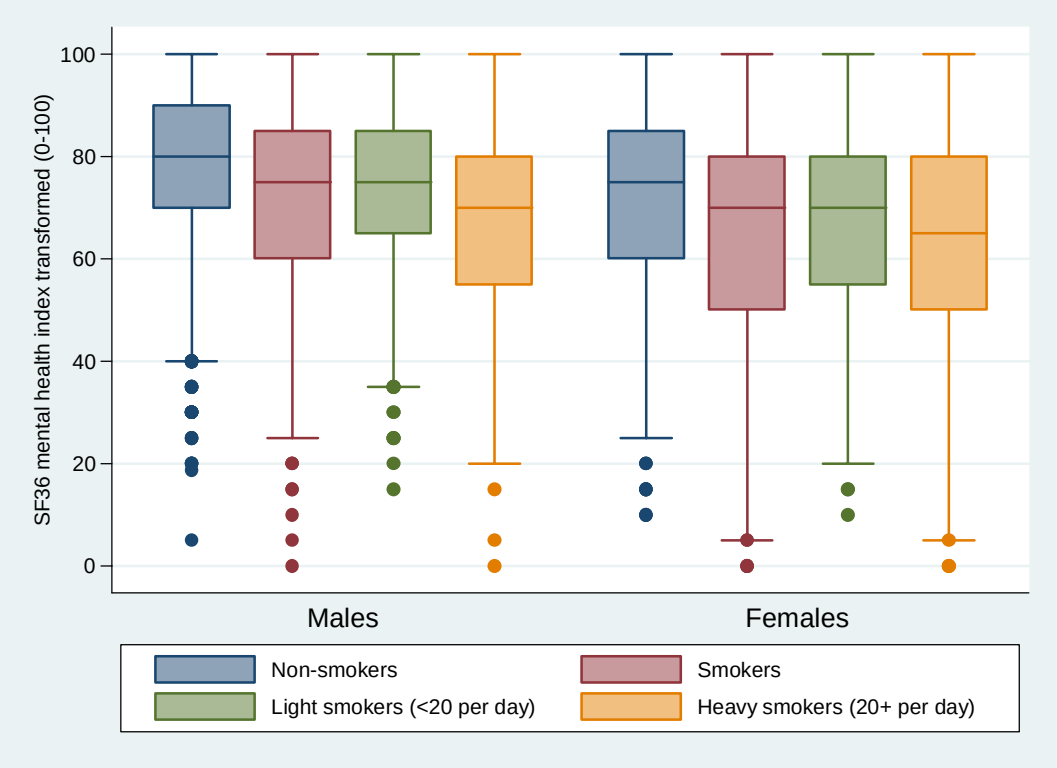



***Table 3.27: Mental Health Index MHI) median plus grouped scores by smoking status and gender (age-standardised percent)***

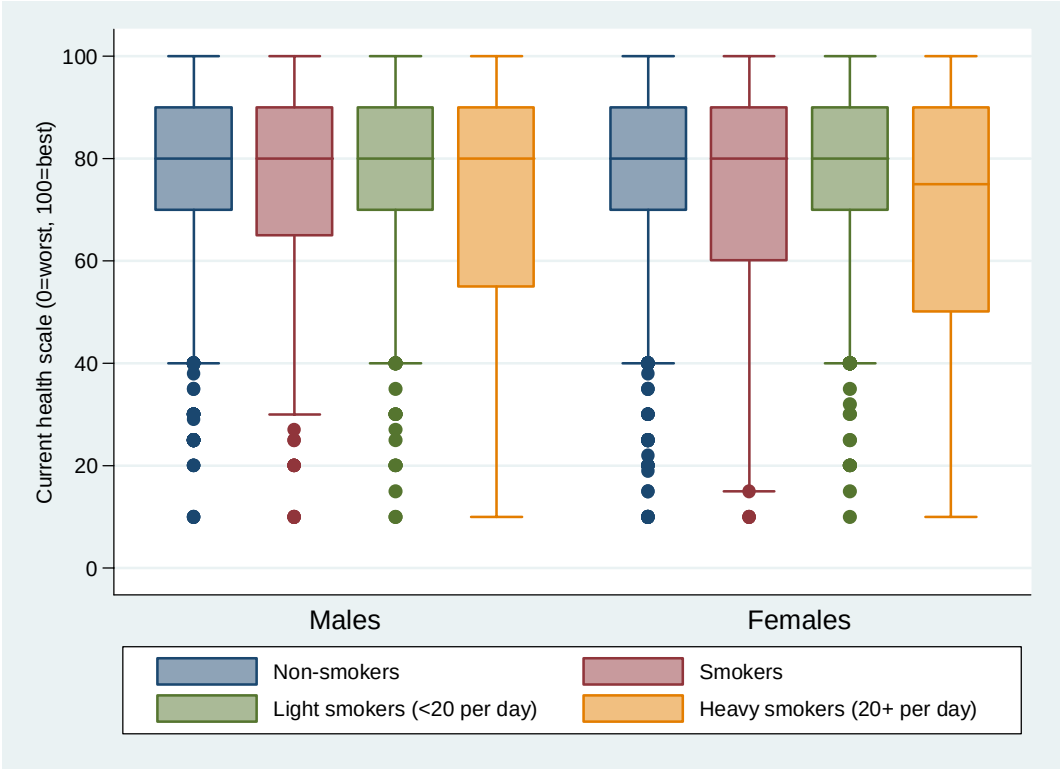
| Smoking status | Total | Grouped MHI score (%) | | | | | | Median |
|---|---|---|---|---|---|---|---|---|
| | | 0-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-100 | |
| ***Males*** | | | | | | | | |
| Never smoked | 750 | 4.8 | 6.2 | 10.4 | 19.8 | 31.2 | 27.6 | 80 |
| Former smoker | 521 | 6.5 | 10.2 | 9.6 | 21.3 | 26.8 | 25.6 | 80 |
| All non-smokers | 1,271 | 5.3 | 6.8 | 10.8 | 20.6 | 29.4 | 27.1 | 80 |
| All smokers | 647 | 9.1 | 11.1 | 11.3 | 23.2 | 28.2 | 17.1 | 75 |
| Light smoker | 154 | 7.3 | 11.5 | 8.3 | 24.6 | 31.1 | 17.2 | 75 |
| Moderate smoker | 237 | 7.4 | 8.7 | 11.8 | 24.2 | 28.9 | 19.0 | 75 |
| Heavy smoker | 207 | 11.1 | 15.9 | 11.1 | 21.8 | 25.9 | 14.3 | 70 |
| ***Females*** | | | | | | | | |
| Never smoked | 929 | 7.6 | 9.8 | 14.9 | 21.6 | 28.0 | 18.0 | 75 |
| Former smoker | 488 | 10.7 | 11.1 | 13.4 | 24.0 | 25.7 | 15.1 | 75 |
| All non-smokers | 1,417 | 8.3 | 10.4 | 14.7 | 22.2 | 27.3 | 17.1 | 75 |
| All smokers | 606 | 19.4 | 15.5 | 13.2 | 19.0 | 20.4 | 12.5 | 70 |
| Light smoker | 136 | 22.6 | 14.0 | 13.2 | 16.6 | 17.1 | 16.5 | 70 |
| Moderate smoker | 259 | 16.0 | 14.2 | 13.4 | 19.9 | 24.5 | 12.0 | 70 |
| Heavy smoker | 189 | 18.8 | 17.9 | 15.4 | 18.7 | 17.5 | 11.9 | 65 |

Men generally scored better than females on the mental health index, for each smoking category. Median mental health index scores were 80 in non-smoking men (75 in non-smoking women); 75 in all men who smoked (except heavy smokers where the median was 70); 70 in all women who smoked, again excepting heavy smokers where the median score was 65.

### 3.4.3 Self-reported current health

Respondents were also asked to say how good or bad their health was on the day the questionnaire was completed. They were asked to assign a score between 0 (the worst health one could imagine) to 100 (the best health one could imagine). The results from this, by smoking status and gender, are displayed graphically in ***Figure 3.26***. There was no variation in median values of the current health scale in males with all smoking groups having a median score of 80. In females only heavy smokers had a score different to this, at 75.

***Figure 3.26: SF36 Current health scale (0-100) by smoking status and gender***




Median scores and a categorisation of the health thermometer scores are shown in ***Table 3.28***. It can be seen that the pattern in men is similar to that in women, with larger percentages of non-smokers reporting their current health as between 90 and 100 than smokers, and with heavy smokers faring worse than light smokers.

Among each of the non-smoking categories, higher percentages of men than women recorded 90-100 on the health thermometer. Conversely, among each of the smoking categories more women than men recorded 90-100 on the health thermometer. At the other end of the health thermometer, more than a third of heavy smokers (36% of men and 39% of women) recorded less than 60 on the health thermometer, double that of those that had never smoked (around 18% of both men and women).

The percentage of men scoring 90-100 on the health thermometer was statistically significantly larger in non-smokers (41%) than smokers (29%), though not in women. However the percentage of women scoring 0-49 on the health thermometer, that is those with the worst self-reported health, was significantly higher among smokers (10%) than non-smokers (5%).

***Table 3.28: Current health scale (0-100) median plus grouped scores by smoking status and gender***

| | | Health thermometer, grouped (%) | | | | | |
|---|---|---|---|---|---|---|---|
| | **Total** | **0-49** | **50-69** | **70-79** | **80-89** | **90-100** | **Median** |
| ***Males*** | | | | | | | |
| Never smoked | 741 | 6.4 | 12.1 | 14.8 | 23.1 | 43.6 | 85 |
| Former smoker | 513 | 5.8 | 15.4 | 17.6 | 26.1 | 35.1 | 80 |
| All non-smokers | 1,254 | 6.4 | 13.0 | 15.8 | 23.5 | 41.3 | 80 |
| All smokers | 635 | 9.7 | 19.3 | 18.9 | 23.2 | 29.0 | 80 |
| Light smoker | 149 | 4.7 | 18.2 | 24.5 | 22.9 | 29.7 | 80 |
| Moderate smoker | 234 | 9.2 | 19.4 | 19.4 | 23.4 | 28.7 | 80 |
| Heavy smoker | 201 | 11.7 | 24.7 | 15.7 | 23.7 | 24.3 | 80 |
| ***Females*** | | | | | | | |
| Never smoked | 899 | 3.3 | 14.7 | 15.7 | 24.3 | 41.9 | 80 |
| Former smoker | 462 | 6.3 | 17.4 | 19.1 | 24.2 | 33.0 | 80 |
| All non-smokers | 1,361 | 4.6 | 15.8 | 16.3 | 24.2 | 39.0 | 80 |
| All smokers | 583 | 10.4 | 21.2 | 17.4 | 19.1 | 31.8 | 80 |
| Light smoker | 131 | 11.1 | 21.1 | 14.7 | 20.8 | 32.4 | 80 |
| Moderate smoker | 251 | 10.3 | 16.2 | 21.8 | 19.3 | 32.4 | 80 |
| Heavy smoker | 181 | 11.8 | 27.2 | 12.5 | 17.8 | 30.7 | 75 |

Respondents were also asked to rate their general health as excellent, very good, good, fair or poor. The age-standardised percentages choosing each response are presented in ***Table 3.29***.

The percentage reporting excellent general health was higher among non-smokers than smokers (45% higher among men and 43% higher among women), with the difference statistically significant in men. Among men the lowest percentage reporting excellent health were the heavy smokers (9%), whist among women the same percentage of heavy smokers reported excellent health as did non-smokers (12%). If we combine the responses for excellent and very good health, more than 50% of men that had never

smoked reported their health as excellent or very good, the only group where a majority reported excellent or very good health.

***Table 3.29: Respondents self-reported general health, by smoking status and gender (age-standardised percent)***

| | Total | Self-reported general health (%) | | | | |
|---|---|---|---|---|---|---|
| | | Excellent | Very good | Good | Fair | Poor |
| ***Males*** | | | | | | |
| Never smoked | 735 | 15.6 | 35.0 | 33.2 | 12.8 | 3.3 |
| Former smoker | 525 | 13.4 | 32.7 | 35.1 | 14.4 | 4.4 |
| All non-smokers | 1,260 | 14.9 | 33.9 | 34.9 | 12.6 | 3.7 |
| All smokers | 634 | 10.3 | 27.9 | 36.0 | 17.8 | 8.0 |
| Light smoker | 153 | 11.4 | 27.5 | 39.4 | 17.7 | 4.0 |
| Moderate smoker | 233 | 9.3 | 26.4 | 38.6 | 19.6 | 6.0 |
| Heavy smoker | 202 | 9.0 | 26.0 | 30.6 | 20.1 | 14.3 |
| ***Females*** | | | | | | |
| Never smoked | 936 | 11.3 | 35.4 | 38.3 | 13.0 | 2.1 |
| Former smoker | 488 | 13.2 | 29.9 | 35.6 | 16.1 | 5.1 |
| All non-smokers | 1,424 | 11.6 | 33.4 | 37.5 | 14.2 | 3.2 |
| All smokers | 603 | 8.1 | 27.8 | 30.6 | 27.0 | 6.6 |
| Light smoker | 137 | 7.9 | 33.9 | 26.7 | 24.2 | 7.2 |
| Moderate smoker | 258 | 6.1 | 26.4 | 35.0 | 28.0 | 4.4 |
| Heavy smoker | 186 | 11.6 | 27.0 | 27.6 | 25.1 | 8.8 |

The percentage with poor health was highest among heavy smokers (14% of men and 9% of women), with the lowest percentages in those that had never smoked. The percentage of smokers reporting poor health was more than double the percentage of non-smokers reporting poor health, for both men and women. The differences in the percentage of smokers and non-smokers reporting either poor or fair health were statistically significant.

### 3.4.4 Illness or disability

***Table 3.30*** shows the age-standardised percentages of respondents reporting that their activities were limited by illness or disability lasting more than one month, and of those registered as disabled as described by the Disability Discrimination Act, by smoking status and gender. Women were more likely to have their activities affected by long-term illness or disability than men, for each smoking category, with larger differences in smokers (34% of women and 20% of men, overall) than non-smokers (21% of women and 19% of men overall). The percentage of women who smoked with activities limited by long-term illness or disability was 60% higher than among women who did not smoke, with the difference statistically significant. The differences between smoking and non-smoking men were smaller.

Heavy smokers were more likely to have their activities affected by long-term illness or disability than light smokers, but the differences were more pronounced in men (31% versus 21%) than women (36% versus 32%), although none of these differences were statistically significant.

Among men, a slightly larger percentage of former smokers (25%) had their activities affected by long-term illness or disability than did current smokers (23%), which might reflect that some men have had to give up smoking due to their long-term illnesses or disabilities. This is reinforced by the percentage registered as disabled with former smokers having the highest percentage amongst men. Among women, heavy smokers had the highest percentage registered as disabled (15%). 5% of women and 6% of men who had never smoked were registered as disabled, the lowest percentage for each gender. The percentage of women that smoked who were registered as disabled (12%) was statistically significantly higher than the percentage of non-smoking women (7%).

***Table 3.30: Respondents reporting activities affected by illness or disability lasting more than one month, and respondents registered as disabled as described under the Disability Discrimination Act, by smoking status and gender (age-standardised percent)***

| Smoking status | Activities affected by long-term illness or disability (%) | | Registered as disabled (%) | |
|---|---|---|---|---|
| | Males | Females | Males | Females |
| Never smoked | 15.7 | 17.1 | 5.9 | 4.8 |
| Former smoker | 24.7 | 27.6 | 10.2 | 10.6 |
| All non-smokers | 19.3 | 21.3 | 7.8 | 7.1 |
| All smokers | 23.4 | 34.2 | 8.5 | 12.4 |
| Light smoker | 20.8 | 32.0 | 7.1 | 11.7 |
| Moderate smoker | 18.9 | 32.7 | 8.1 | 10.7 |
| Heavy smoker | 30.5 | 35.8 | 7.8 | 15.3 |

## *3.5 Smoking and alcohol*

Smoking and alcohol are important risk factors for many diseases. The effect of the combination of these two risk factors may greatly increase the risk of developing these diseases. In the health and lifestyle survey, information was collected on the amount of alcohol consumed in the previous week, whether the respondent ever drank alcohol, and the frequency of drinking more than the government guidelines on safe drinking levels. These will be examined here in relation to both smoking status and levels of cigarette smoking.

### 3.5.1 Frequency of alcohol consumption

***Figure 3.27*** shows the age-standardised percentages of respondents that drink alcohol on at least 4 days per week, by gender and smoking status. For each smoking category, the percentage of men drinking alcohol on at least 4 days per week was at least twice as high as the percentage of women doing so. Among moderate or heavy smokers the percentage of men drinking alcohol on at least 4 days per week was four times as high as the percentage of women.

Among men, 26% of smokers drank alcohol on at least 4 days per week compared with 16% of non-smokers, which was statistically significant (although at 24% the percentage of former smokers was similar to smokers, suggesting that stopping smoking is often done in isolation from other unhealthy lifestyle activities). Heavy smokers had the highest percentage that drank alcohol on at least 4 days per week (31%). The pattern was different among women, amongst whom former smokers had the highest percentage drinking alcohol on at least 4 days per week (9%) followed by heavy smokers (8%) while overall, smokers and non-smokers had similar percentages drinking alcohol on at least 4 days per week at around 7%.

***Figure 3.27: Age-standardised percentage of frequent drinkers (drinking alcohol on at least 4 days per week), by gender and smoking status***

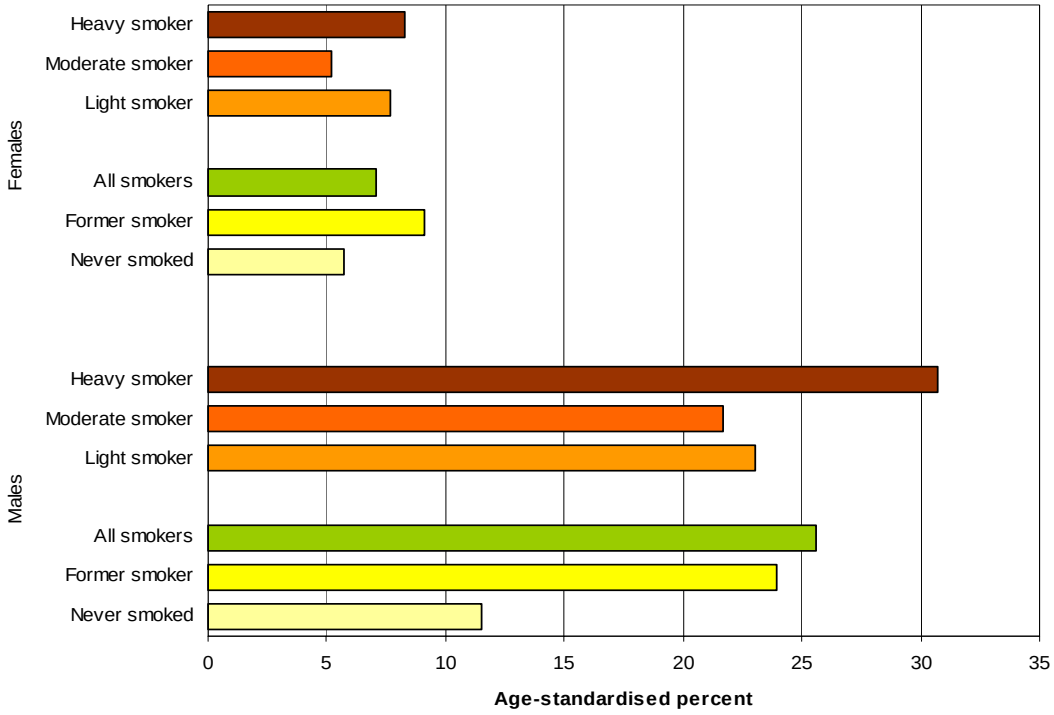



***Table 3.31*** shows a more detailed breakdown of the frequency of alcohol consumption by smoking category and gender (age-standardised percentages). Looking firstly at men, smokers were 80% more likely to drink

everyday than non-smokers, and 50% more likely to drink on 4-6 days per week than smokers, whilst they were 36% less likely to drink on just 1-3 days per month and 30% less likely to never drink alcohol, with each of these differences statistically significant. Percentages in former smokers were similar to those for current smokers. Heavy smokers, who had the highest percentage of all smoking categories drinking alcohol everyday, were around 80% more likely to drink alcohol everyday than other smokers, but this was not statistically significant. Only among those drinking alcohol on 1-3 days per month was the percentage of heavy smokers statistically significantly different to the percentage of other smokers (50% lower). Light smokers had the lowest percentage among men that never drank alcohol (7%), whilst the highest percentage was in men that had never smoked (22%).

***Table 3.31: Frequency of alcohol consumption (the number of days per week (dpw) or days per month (dpm) that respondents usually drink alcohol) by gender and smoking status (age-standardised percent)***

| | Total | Frequency of alcohol consumption (%) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Daily | 4-6 dpw | 1-3 dpw | 1-3 dpm | <1 dpm | Never |
| ***Males*** | | | | | | | |
| Never smoked | 759 | 5.1 | 6.4 | 33.8 | 20.5 | 12.1 | 22.2 |
| Former smoker | 528 | 8.8 | 15.1 | 34.4 | 16.6 | 12.0 | 13.0 |
| All non-smokers | 1,287 | 6.8 | 8.7 | 33.4 | 20.0 | 12.2 | 19.0 |
| All smokers | 651 | 12.3 | 13.3 | 34.8 | 12.7 | 13.7 | 13.3 |
| Light smoker | 154 | 8.9 | 14.1 | 37.8 | 18.8 | 13.5 | 6.9 |
| Moderate smoker | 235 | 9.1 | 12.6 | 33.0 | 12.8 | 17.9 | 14.6 |
| Heavy smoker | 211 | 16.7 | 14.0 | 33.8 | 7.8 | 11.6 | 16.1 |
| ***Females*** | | | | | | | |
| Never smoked | 939 | 1.9 | 3.8 | 23.1 | 20.8 | 21.9 | 28.6 |
| Former smoker | 490 | 3.0 | 6.1 | 28.6 | 24.6 | 20.2 | 17.5 |
| All non-smokers | 1,429 | 2.2 | 4.4 | 25.1 | 22.1 | 21.4 | 24.8 |
| All smokers | 612 | 2.1 | 5.0 | 26.4 | 17.1 | 23.7 | 25.7 |
| Light smoker | 136 | 0.4 | 7.3 | 24.0 | 20.5 | 22.1 | 25.6 |
| Moderate smoker | 264 | 0.3 | 4.9 | 30.0 | 17.5 | 21.1 | 26.1 |
| Heavy smoker | 190 | 4.7 | 3.6 | 22.5 | 17.0 | 28.8 | 23.4 |

Amongst women the patterns were different to those in men. The percentages drinking alcohol on at least 1-3 days per week were smaller for each smoking category than in men. The frequency of alcohol consumption among women was similar in both smokers and non-smokers, with around 2% in each group drinking alcohol everyday and a quarter of each group never drinking alcohol. Heavy smokers had the highest percentage drinking alcohol everyday (5%), while former smokers had the highest percentage drinking alcohol on at least 4 days per week (9%) as well as the lowest percentage that never drank alcohol (18%). The highest percentage of women that never drank alcohol were those that had never smoked (29%), whilst among smokers heavy smokers had the lowest percentage (23%). None of the differences between smokers and non-smokers, or heavy smokers and other smokers were statistically significant.

### 3.5.2 Binge drinking

***Figure 3.28*** and ***Table 3.32*** show the frequency of binge drinking, defined as the consumption on a single day of 8 or more units of alcohol (men) or 6 or more units of alcohol (women), by smoking status (age-standardised percent) amongst those that drink alcohol. Looking firstly at men, smokers that drank were more than twice as likely to binge drink on at least 4 days per week (12%) than non-smokers (5%), 40% more likely to binge drink on 1-3 days per week and almost 30% less likely to binge drink on 1-3 days per month, with each of these differences statistically significant. At more than twice the level of other smokers, 19% of heavy smokers reported binge drinking on at least 4 days per week, which was statistically significantly higher than for other smokers.

Almost half of smokers that drank alcohol reported binge drinking on at least one day per week (46%) compared to 29% of non-smokers, rising to more than half of heavy smokers (52%). Among those that drank alcohol only around one quarter reported never binge drinking, with the lowest percentage among light smokers (20%) and the highest percentage among those that had never smoked (27%).

***Figure 3.28: Age-standardised percentage of respondents binge drinking (Males: 8 units in a single day; Females: 6 units in a single day) at least weekly by gender and smoking status, alcohol drinkers only***

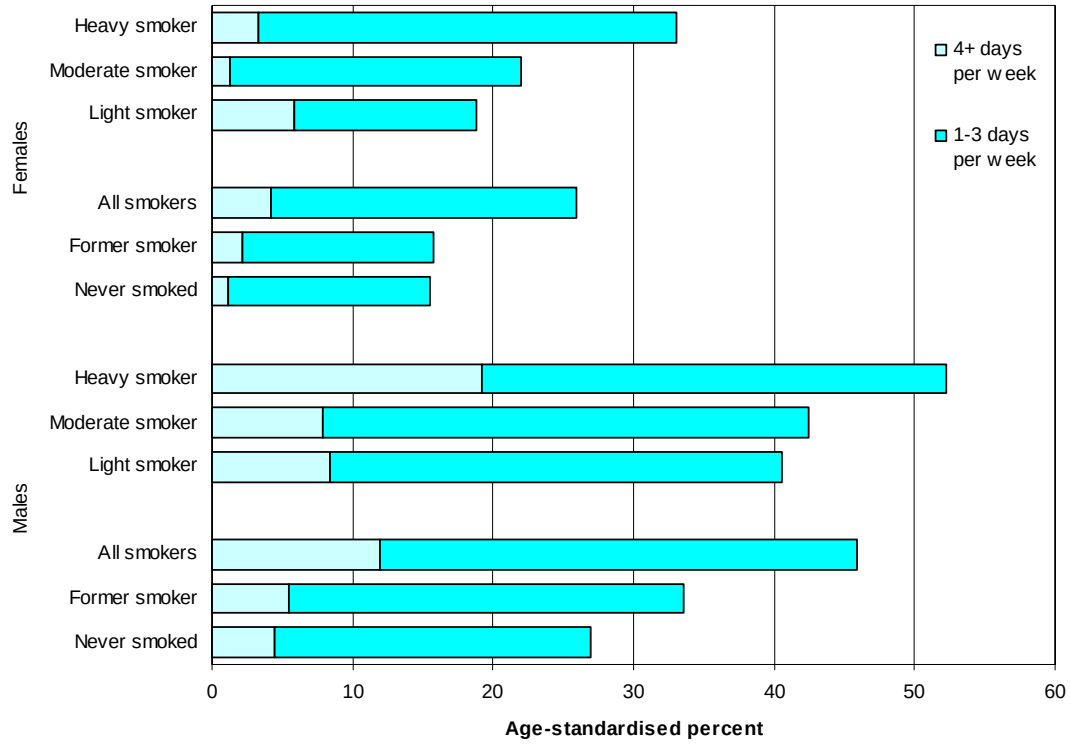


***Table 3.32: Frequency of binge drinking (Males: 8 units in a single day; Females: 6 units in a single day) by gender and smoking status (age-standardised percent), alcohol drinkers only***

| | Total | Frequency of binge drinking (%) | | | | |
|---|---|---|---|---|---|---|
| | | 4+ dpw | 1-3 dpw | 1-3 dpm | <1 dpm | Never |
| ***Males*** | | | | | | |
| Never smoked | 581 | 4.4 | 22.6 | 26.4 | 19.8 | 26.9 |
| Former smoker | 428 | 5.5 | 28.1 | 21.2 | 19.3 | 25.8 |
| All non-smokers | 1,009 | 5.0 | 24.2 | 24.2 | 20.0 | 26.5 |
| All smokers | 559 | 12.0 | 33.9 | 17.2 | 15.2 | 21.6 |
| Light smoker | 142 | 8.4 | 32.2 | 20.9 | 18.8 | 19.7 |
| Moderate smoker | 201 | 7.9 | 34.6 | 19.4 | 15.1 | 23.1 |
| Heavy smoker | 176 | 19.2 | 33.0 | 11.0 | 14.4 | 22.4 |
| ***Females*** | | | | | | |
| Never smoked | 562 | 1.1 | 14.4 | 14.6 | 27.1 | 42.8 |
| Former smoker | 336 | 2.1 | 13.6 | 19.5 | 27.1 | 37.7 |
| All non-smokers | 898 | 1.6 | 14.4 | 16.5 | 27.0 | 40.5 |
| All smokers | 374 | 4.2 | 21.7 | 19.3 | 25.8 | 29.0 |
| Light smoker | 88 | 5.8 | 13.0 | 21.0 | 26.6 | 33.6 |
| Moderate smoker | 163 | 1.3 | 20.7 | 20.9 | 22.6 | 34.5 |
| Heavy smoker | 112 | 3.3 | 29.8 | 16.6 | 26.0 | 24.3 |

Looking next at women, patterns of binge drinking by smoking category were similar to those in men, although for each smoking category there were fewer women than men binge drinking on a weekly basis or more frequently. Smokers that drank alcohol were more than twice as likely as non-smokers to binge drink on at least 4 days per week, and more than 50% more likely to binge drink on 1-3 days per week, the latter difference statistically significantly. The pattern with regard to number of cigarettes smoked was less clear, with heavy smokers less likely than light smokers to binge drink on at least 4 days per week, but more likely to do so than moderate smokers.

Overall, 26% of smokers and 16% of non-smokers reported binge drinking on at least one day per week. The highest percentage of weekly binge drinkers was found among heavy smokers (33%) with the lowest percentage among non-smokers, with little difference between those that had never smoked and former smokers. 29% of smokers reported never binge drinking compared with 41% of non-smokers. Those that reported never binge drinking formed the largest percentage of women that drank alcohol in each smoking category with the exception of heavy smokers, amongst whom those that reported binge drinking on 1-3 days per week formed the largest percentage.

### 3.5.3 Excessive units/binge drinking

***Table 3.33*** combines the data on binge drinking and total weekly consumption of alcohol to present the age-standardised percentages that drink excessively or regularly binge drink (at least once a week), by smoking status. For men, weekly consumption of up to 21 units is deemed acceptable, while for women

acceptable consumption is defined as 14 units. As previously, binge drinking is defined in men as the consumption of at least 8 units of alcohol in a single day, and in women as the consumption of 6 or more units in a single day.

Looking firstly at men, 25% of smokers were binge drinkers and had consumed more than 21 units of alcohol in the 7 days prior to completing the survey, statistically significantly higher than, at more than double the percentage, of non-smokers. A further 16% of smokers and 13% of non-smokers were binge drinkers but consumed less than 21 units of alcohol in the week prior to completing the survey. The largest percentage binge drinking and drinking excessively were heavy smokers at 29%, amongst whom a further 17% were binge drinkers but within acceptable weekly limits. The lowest percentages binge drinking, both exceeding and within acceptable weekly limits, were those that had never smoked (9% and 12% respectively). The percentage who never drank alcohol was 31% lower in smokers than non-smokers, and the percentage who drank alcohol within acceptable weekly limits and did not binge drink was 22% lower in smokers than non-smokers, both differences statistically significant.

***Table 3.33: Units of alcohol consumed and binge drinking status by gender and smoking status (age-standardised percent)***

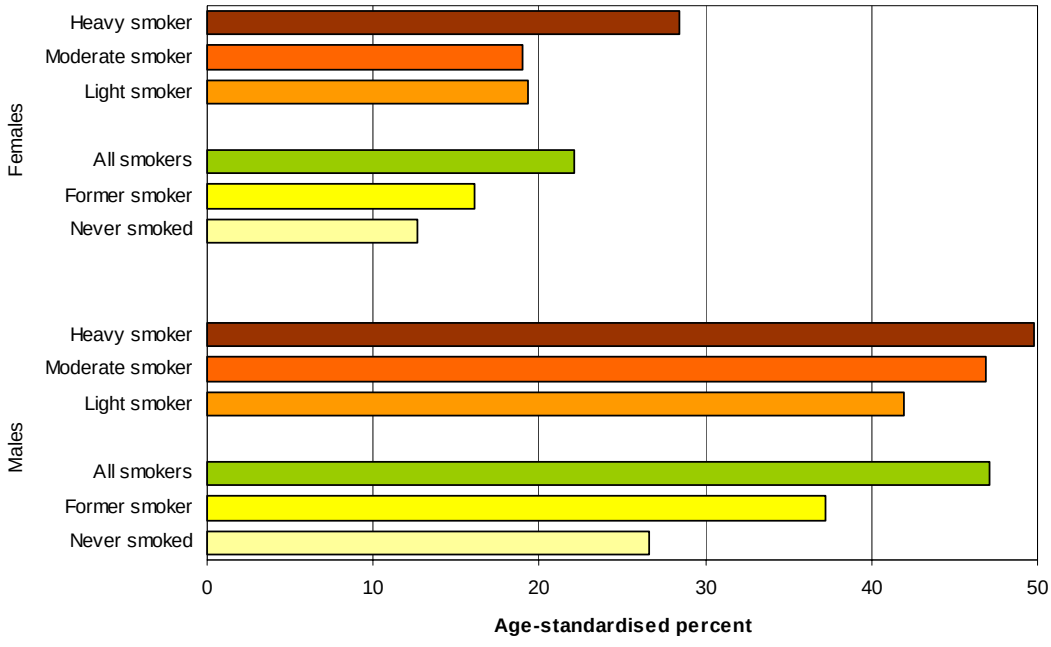
| Gender and smoking status | Total | Alcohol consumption and binge drinking (%) | | | | |
|---|---|---|---|---|---|---|
| | | Never drinks alcohol | Units of alcohol consumed in last 7 days | | | |
| | | | None/acceptable | | Excessive | |
| | | | Binge drinking | | Binge drinking | |
| | | | Yes | No | Yes | No |
| ***Males*** | | | | | | |
| Never smoked | 744 | 22.7 | 12.4 | 50.6 | 8.9 | 5.3 |
| Former smoker | 507 | 13.7 | 13.5 | 49.2 | 16.3 | 7.4 |
| All non-smokers | 1,251 | 19.5 | 12.5 | 50.3 | 11.4 | 6.4 |
| All smokers | 638 | 13.5 | 16.0 | 39.2 | 24.9 | 6.2 |
| Light smoker | 150 | 7.0 | 16.7 | 51.1 | 22.0 | 3.3 |
| Moderate smoker | 233 | 14.6 | 15.2 | 38.4 | 22.0 | 9.7 |
| Heavy smoker | 206 | 16.4 | 16.6 | 33.8 | 28.8 | 4.4 |
| ***Females*** | | | | | | |
| Never smoked | 829 | 32.3 | 7.6 | 55.0 | 3.4 | 1.7 |
| Former smoker | 422 | 20.2 | 7.3 | 63.6 | 5.4 | 3.4 |
| All non-smokers | 1,251 | 28.2 | 7.7 | 57.9 | 4.1 | 2.1 |
| All smokers | 510 | 30.5 | 10.5 | 47.4 | 8.2 | 3.4 |
| Light smoker | 119 | 29.7 | 7.8 | 51.0 | 7.0 | 4.5 |
| Moderate smoker | 221 | 30.9 | 7.1 | 50.0 | 8.7 | 3.2 |
| Heavy smoker | 154 | 27.9 | 17.3 | 43.7 | 8.7 | 2.4 |

Looking next at women, similar patterns are apparent, although the age-standardised percentages of women either binge drinking or drinking excessively or both were lower than for men in each smoking category except

heavy smokers, where the percentage of women binge drinking within acceptable weekly limits was greater than for men. Twice as many smokers (8%) as non-smokers (4%) both drank excessive weekly amounts and were binge drinkers (a statistically significant difference), while a further 11% of smokers and 8% of non-smokers reported binge drinking but within acceptable weekly units. Heavy smokers had the greatest percentage of binge drinkers who drink excessively (jointly with moderate smokers at 9%), with a further 17% binge drinking but within acceptable weekly limits, which was statistically significantly higher than in other smokers. As with men, women that had never smoked had the lowest percentage both binge drinking and drinking excessive weekly amounts (3%) although the percentage binge drinking within acceptable weekly amounts was slightly higher (at 8%) than both former smokers and moderate smokers (7% in each group).

***Figure 3.29*** displays the age-standardised percentage of 'problem' drinkers, i.e. those that either binge drink, drink excessive weekly amounts or both. Clear associations between 'problem' drinking and smoking are apparent, especially in men. Looking first at men, the age-standardised percentage of 'problem' drinkers is statistically significant higher among smokers (47%) than non-smokers (30%); higher in former smokers (37%) than those who had never smoked (27%); higher in heavy smokers (50%), compared with 47% in moderate smokers and 42% in light smokers.

***Figure 3.29: 'Problem' drinkers (binge drinking, drinking excessive weekly amounts or both) by gender and smoking status***




Amongst women, a similar pattern is apparent, although the percentages of 'problem' drinkers in women are less than half those in men, with the exception of heavy smokers (two thirds the level in men). Heavy smokers had

the largest percentage of 'problem' drinkers (28%) compared with 19% for light and moderate smokers. 22% of all female smokers were defined as 'problem' drinkers, statistically significantly higher than the 14% of non-smokers, amongst whom those that had never smoked had the lowest percentage of 'problem' drinkers (13%) compared with 16% of former smokers.

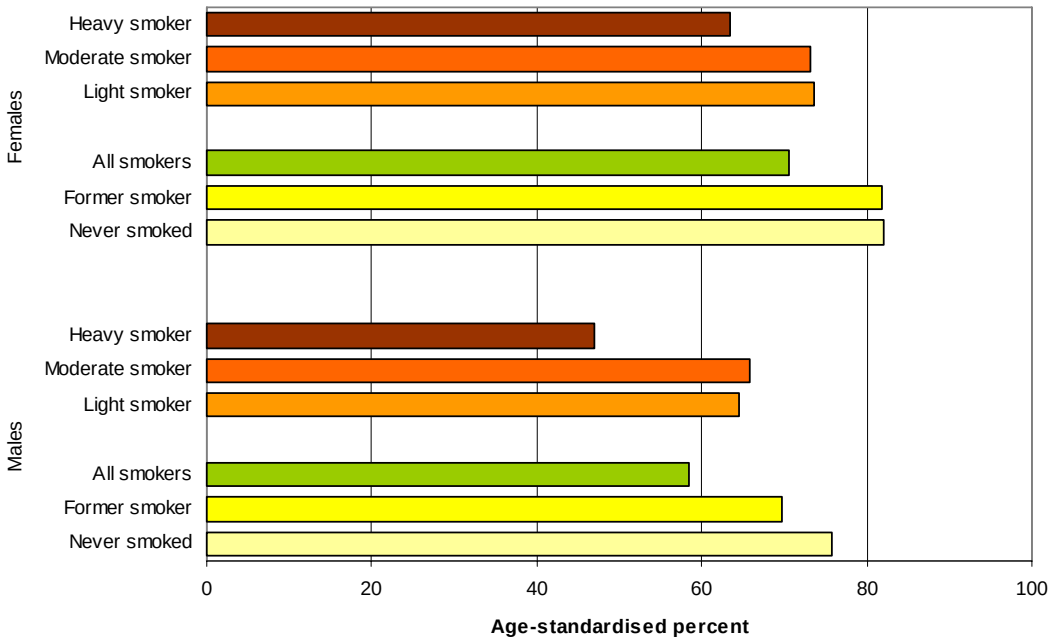
## *3.6 Smoking and diet*

Having already seen that smokers have worse general health, mental health and drink more alcohol, this section examines whether their diets are also worse than non-smokers. Differences by smoking category of the type of diet eaten, and how it fares against national recommendations, particularly with regard to fruit and vegetable consumption, will be examined.

### 3.6.1 Eating a healthy diet

***Figure 3.30*** shows the age-standardised percentages eating a healthy diet by smoking category while ***Figure 3.31*** shows the age-standardised percentages that had tried to eat more healthily over the past year by smoking category. These data, together with the age-standardised percentages lacking sufficient knowledge about healthy diets, are also presented in ***Table 3.34***.

***Figure 3.30: Age-standardised percentage of respondents eating a healthy diet (self-reported) by gender and smoking status***



Looking first at the percentages with a healthy diet, a higher percentage of women than men in each smoking category reported that they ate a healthy diet. Non-smokers were more likely to have a healthy diet than smokers, 28% higher among men and 16% higher among women, statistically significant for both genders. Heavy smokers had by far the lowest percentages of any smoking category eating a healthy diet (47% of men and 63% of women) with the percentage in men that smoked heavily significantly lower than among men smoking less than 20 cigarettes per day (65%). The highest percentages eating a healthy diet were in those that had never smoked (76% of men and 82% of women).

***Table 3.34: Healthy diet eaten / tried to eat healthier over past year by smoking status (age-standardised percent)***

| | Eating a healthy diet / tried to eat more healthily over past year(%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Healthy diet eaten | | | | | Tried to eat healthier over past year | |
| | Total | Yes (%) | No (%) | Don't know[1] (%) | Don't know[2] (%) | Total | Yes (%) |
| ***Males*** | | | | | | | |
| Never smoked | 758 | 75.8 | 16.3 | 1.5 | 6.4 | 640 | 76.6 |
| Former smoker | 528 | 69.8 | 23.8 | 1.8 | 4.5 | 457 | 73.3 |
| All non-smokers | 1,286 | 74.7 | 18.0 | 1.6 | 5.7 | 1,097 | 76.6 |
| All smokers | 651 | 58.5 | 28.1 | 4.2 | 9.2 | 526 | 64.3 |
| Light smoker | 154 | 64.6 | 21.7 | 3.3 | 10.4 | 124 | 66.7 |
| Moderate smoker | 236 | 65.7 | 21.5 | 5.6 | 7.3 | 190 | 66.3 |
| Heavy smoker | 211 | 47.0 | 37.7 | 5.4 | 9.9 | 174 | 56.3 |
| ***Females*** | | | | | | | |
| Never smoked | 939 | 82.0 | 13.1 | 0.8 | 4.1 | 825 | 87.9 |
| Former smoker | 491 | 81.9 | 10.8 | 1.6 | 5.6 | 433 | 88.5 |
| All non-smokers | 1,430 | 82.1 | 12.6 | 0.9 | 4.5 | 1,258 | 88.5 |
| All smokers | 612 | 70.5 | 21.7 | 1.4 | 6.4 | 541 | 83.6 |
| Light smoker | 137 | 73.6 | 18.4 | 2.4 | 5.6 | 117 | 89.0 |
| Moderate smoker | 261 | 73.1 | 20.5 | 1.2 | 5.2 | 238 | 84.7 |
| Heavy smoker | 191 | 63.4 | 26.5 | 1.1 | 9.0 | 166 | 79.4 |

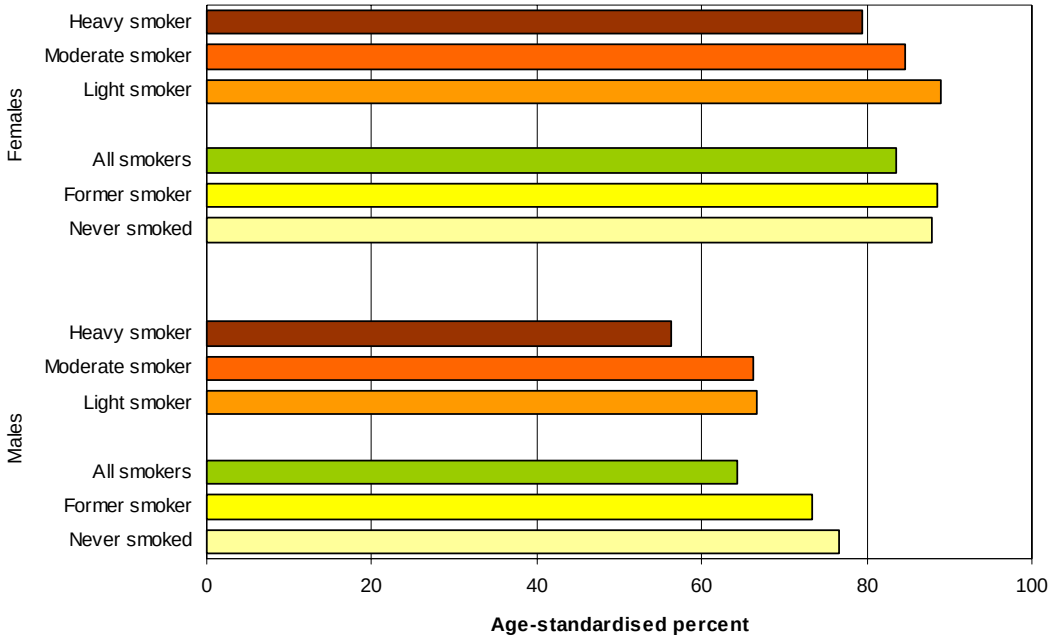
1 Don't know if have a healthy diet 2 Don't know what constitutes a healthy diet

Knowledge about healthy eating also appeared to be associated with smoking but with men less knowledgeable than women, with higher percentages among men than women in each smoking category except former smokers answering "Don't know" to the question "Generally speaking, do you think that you have a healthy diet?" Amongst men twice as many smokers as non-smokers answered "Don't know", which was a statistically significant difference; while the largest percentages answering "Don't know" were heavy smokers, 15% of heavy smoking men and 10% of heavy smoking women.

More men than women in each smoking category had tried to eat more healthily over the past year (***Figure 3.31***). For each gender more non-

smokers had tried to eat healthier over the past year (77% of men and 89% of women) than smokers (64% of men and 84%), with the difference between smokers and non-smokers statistically significant in men. Heavy smokers had the lowest percentages that had tried to eat healthier over the past year (56% of men and 79% of women).

***Figure 3.31: Age-standardised percentage of respondents that had tried to eat healthier over the past year by gender and smoking status***




### 3.6.2 Fruit and vegetable consumption

***Table 3.35*** shows the consumption of fruits and vegetables by number of portions consumed per day, gender and smoking category (age-standardised percentages), while the age-standardised percentages meeting the 5-a-day target by smoking status are also presented in ***Figure 3.32***. Fewer than 30% of respondents met the 5-a-day target, with lower percentages among men than women for each smoking category. The percentages meeting the 5-a-day target appeared to be associated with smoking, with 12% of men and 16% of women among smokers eating 5 or more portions of fruits and vegetable per day compared with 24% of men and 28% of women that did not smoke.

The differences in the percentages eating 5 portions of fruits and vegetables per day between smokers and non-smokers were statistically significant for both men and women. At the same time statistically significantly higher percentages of smokers were eating less than three portions per day (49% of men and 33% of women) than non-smokers (31% of men and 22% of women).

***Figure 3.32: Age-standardised percentage of respondents that eat ate least 5 portions of fruits and vegetables per day by gender and smoking status***

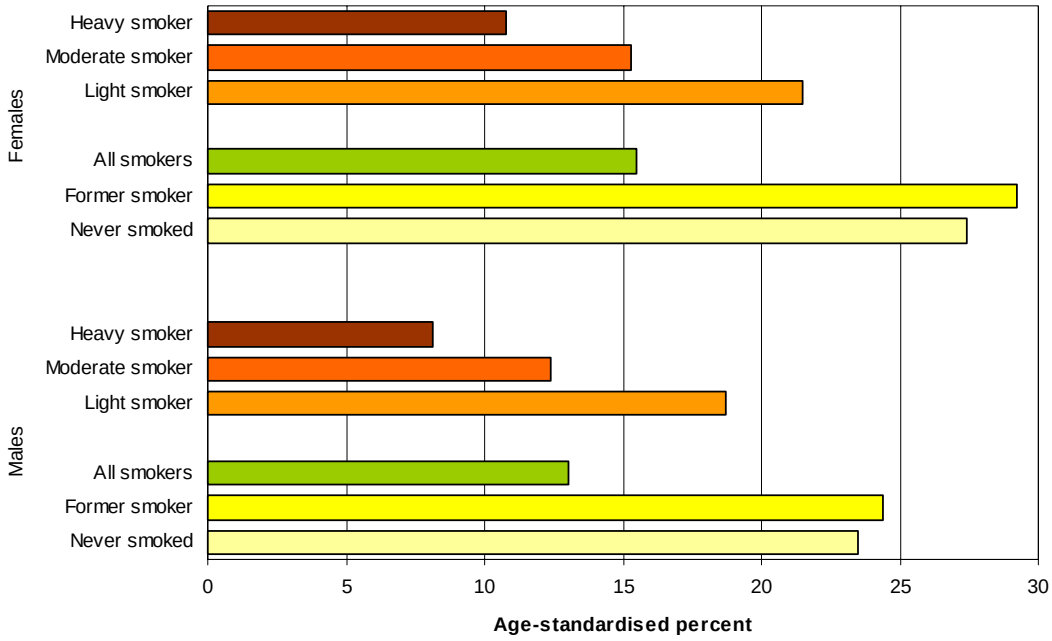



***Table 3.35: Average daily fruit and vegetable consumption by smoking status (age-standardised percent)***

| Smoking status | Portions of fruits and vegetables consumed each day on average (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | |
| | Total | Portions | | | Total | Portions | | |
| | | <3 | 3-4 | 5+ | | <3 | 3-4 | 5+ |
| Never smoked | 747 | 30.3 | 46.2 | 23.5 | 925 | 21.6 | 51.0 | 27.4 |
| Former smoker | 520 | 34.6 | 41.0 | 24.4 | 485 | 22.5 | 48.3 | 29.2 |
| All non-smokers | 1,267 | 31.4 | 44.1 | 24.4 | 1,410 | 21.7 | 50.2 | 28.1 |
| All smokers | 635 | 49.4 | 37.5 | 13.0 | 590 | 32.6 | 51.9 | 15.5 |
| Light smoker | 154 | 33.0 | 48.3 | 18.7 | 134 | 26.2 | 52.3 | 21.5 |
| Moderate smoker | 227 | 49.9 | 37.7 | 12.4 | 254 | 32.9 | 51.8 | 15.3 |
| Heavy smoker | 205 | 63.2 | 28.7 | 8.1 | 183 | 40.0 | 49.2 | 10.8 |

The percentage meeting the 5-a-day target also appeared to be associated with the number of cigarettes smoked per day, with 8% of heavy smoking men meeting the target compared with 12% of men who smoked moderately and 19% of men that were light smokers, with similar differences in women. These differences were not statistically significant. More striking were the percentages eating les than 3 portions of fruits and vegetables per day, with almost twice as many heavy smoking men than light smoking men, which was statistically significant.

The differences were smaller in women (and not statistically significant), although 50% more heavy smokers ate less than 3 portions a day compared with non-smokers. Whether these differences are due to lack of knowledge, or lack of money (given the higher smoking rates amongst deprived groups and the high price of cigarettes) is not clear, although 15% and 10% of heavy smoking men and women respectively answered "Don't know" to the healthy diet question which does suggest lack of awareness may be at least part of the explanation.

### 3.6.3 Type of meals consumed

***Table 3.36*** shows the average weekly consumption of various types of meals by smoking status and gender. While there were some differences by smoking category the between gender differences were in most cases larger than the within gender differences.

Looking firstly at men, smokers were more likely to eat ready meals (40% ate at least 1 per week; 14% ate 3 or more) than non-smokers (31% ate at least 1 per week; 8% ate 3 or more) and were more likely to eat takeaway or other convenience foods (54% ate at least 1 per week; 11% 3 or more) than non-smokers (47% ate at least 1 per week; 8% ate 3 or more). Smokers were less likely to eat home cooked meals (26% eating less than 1 meal per week cooked using some fresh ingredients and 24% eating less than 1 meal per week cooked from scratch with fresh ingredients) than non-smokers (20% and 18% respectively).

Men that were heavy smokers ate more ready meals and takeaways than men that were light or moderate smokers, and fewer home cooked meals. Differences between smokers and non-smokers, and between heavy smokers and other smokers, were not statistically significant with the exception of the percentage eating three or more ready meals per day (80% higher among smokers); the percentage eating less than one meal cooked from scratch using fresh ingredients (34% higher among smokers, twice as high among heavy smokers than light smokers).

Among women there were fewer differences. 78% of both smokers and non-smokers ate less than 1 ready meal per week, although slightly more smokers (6%) ate 3 or more per week than non-smokers (4%), with the highest percentage in heavy smokers (9%). A similar picture was found for takeaway and other convenience meals with 66% of smokers and non-smokers eating less than 1 per week, but 2% of non-smokers and 4% of smokers eating at least 3 per week, rising to 6% of heavy smokers. Percentages eating home cooked foods were again similar for smokers and non-smokers; 75% of smokers and 74% of non-smokers ate at least 1 meal cooked using some fresh ingredients, half of these eating at least 3 per week.

Women that were heavy smokers were the most likely to eat at least 1 meal cooked using some fresh ingredients (77%) but second least likely, after

former smokers, to eat 3 or more per week. The largest differences between smoking and non-smoking women were seen for meals cooked from scratch using fresh ingredients with 83% of smokers and 87% of non-smokers eating at least 1 per week; while 53% and 60% respectively ate at least 3 per week. Heavy smokers had the highest percentage eating less than 1 meal cooked from scratch using fresh ingredients per week (23%) and the lowest percentage eating 3 or more per week (49%). None of these differences between smokers and non-smokers, and between heavy smokers and other smokers) were statistically significant with the exception of the percentage eating less than one meal cooked from scratch using fresh ingredients (42% higher among smokers than non-smokers).

***Table 3.36: Average weekly consumption of ready meals, other convenience or takeaway foods, freshly cooked meals by smoking status, males (age-standardised percent)***

| Smoking status and meal type | Average weekly consumption of food by meal type (%) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | | | Females | | | | | |
| | Total | Average per week | | | | | Total | | | | | |
| | | 0 | <1 | 1-2 | 3-4 | 5+ | | 0 | <1 | 1-2 | 3-4 | 5+ |
| ***Ready meals*** | | | | | | | | | | | | |
| Never smoked | 752 | 36.4 | 31.5 | 23.1 | 7.0 | 2.0 | 927 | 41.9 | 36.6 | 17.0 | 4.0 | 0.4 |
| Former smoker | 520 | 32.8 | 36.7 | 24.5 | 5.2 | 0.8 | 487 | 46.3 | 31.9 | 18.6 | 2.1 | 1.3 |
| All non-smokers | 1,272 | 35.8 | 32.8 | 23.4 | 6.3 | 1.7 | 1,414 | 43.0 | 35.4 | 17.4 | 3.5 | 0.7 |
| All smokers | 643 | 34.1 | 26.4 | 25.2 | 10.9 | 3.4 | 611 | 44.1 | 34.3 | 15.9 | 4.8 | 0.9 |
| Light smoker | 155 | 32.5 | 33.3 | 25.0 | 7.8 | 1.4 | 136 | 42.2 | 37.9 | 12.4 | 5.8 | 1.8 |
| Moderate smoker | 233 | 38.2 | 27.3 | 22.2 | 9.5 | 2.7 | 262 | 43.1 | 34.3 | 19.0 | 3.6 | 0.0 |
| Heavy smoker | 208 | 33.4 | 22.7 | 26.6 | 11.7 | 5.6 | 190 | 45.9 | 28.8 | 16.1 | 7.5 | 1.8 |
| ***Takeaway and other convenience foods*** | | | | | | | | | | | | |
| Never smoked | 751 | 12.7 | 41.0 | 38.0 | 7.4 | 0.8 | 919 | 12.9 | 51.7 | 33.0 | 2.1 | 0.2 |
| Former smoker | 517 | 9.9 | 39.5 | 42.8 | 7.4 | 0.5 | 484 | 12.5 | 56.5 | 30.3 | 0.5 | 0.3 |
| All non-smokers | 1,268 | 11.8 | 41.1 | 39.4 | 7.1 | 0.7 | 1,403 | 12.4 | 53.3 | 32.3 | 1.8 | 0.2 |
| All smokers | 643 | 9.8 | 36.5 | 42.5 | 8.9 | 2.3 | 610 | 12.8 | 52.7 | 30.6 | 2.9 | 0.9 |
| Light smoker | 155 | 10.6 | 45.4 | 36.6 | 5.3 | 2.1 | 136 | 10.2 | 56.9 | 29.9 | 1.5 | 1.5 |
| Moderate smoker | 231 | 9.0 | 38.5 | 42.4 | 8.9 | 1.3 | 262 | 11.3 | 56.6 | 29.4 | 2.3 | 0.5 |
| Heavy smoker | 207 | 13.9 | 29.4 | 40.5 | 12.5 | 3.7 | 189 | 13.8 | 46.4 | 33.7 | 5.4 | 0.8 |
| ***Cooked meals using some fresh ingredients*** | | | | | | | | | | | | |
| Never smoked | 748 | 8.1 | 12.2 | 29.0 | 39.1 | 11.5 | 919 | 9.5 | 15.7 | 37.0 | 28.2 | 9.7 |
| Former smoker | 505 | 7.9 | 13.0 | 40.5 | 29.8 | 8.7 | 480 | 8.1 | 20.6 | 37.4 | 22.0 | 12.0 |
| All non-smokers | 1,253 | 8.0 | 12.1 | 33.2 | 36.2 | 10.4 | 1,399 | 9.0 | 17.3 | 36.6 | 26.5 | 10.5 |
| All smokers | 642 | 10.4 | 16.0 | 34.4 | 30.2 | 9.0 | 599 | 9.5 | 15.8 | 36.5 | 28.2 | 10.0 |
| Light smoker | 153 | 6.0 | 16.5 | 36.8 | 29.5 | 11.3 | 132 | 14.7 | 20.9 | 32.2 | 26.9 | 5.3 |
| Moderate smoker | 232 | 11.2 | 14.6 | 31.1 | 31.9 | 11.2 | 258 | 8.4 | 15.9 | 34.3 | 30.6 | 10.7 |
| Heavy smoker | 208 | 14.6 | 18.6 | 35.7 | 25.4 | 5.7 | 188 | 8.6 | 13.9 | 42.5 | 25.4 | 9.6 |
| ***Cooked meals made from scratch with fresh ingredients*** | | | | | | | | | | | | |
| Never smoked | 752 | 6.6 | 13.5 | 30.2 | 29.8 | 19.9 | 936 | 4.7 | 9.1 | 27.7 | 31.9 | 26.6 |
| Former smoker | 524 | 6.3 | 9.0 | 34.4 | 26.1 | 24.3 | 489 | 4.5 | 8.7 | 23.9 | 31.0 | 32.0 |
| All non-smokers | 1,276 | 5.9 | 11.8 | 31.7 | 29.4 | 21.1 | 1,425 | 4.6 | 8.8 | 26.6 | 31.4 | 28.6 |
| All smokers | 644 | 7.6 | 16.1 | 30.8 | 25.8 | 19.7 | 612 | 7.1 | 11.9 | 27.8 | 30.7 | 22.5 |
| Light smoker | 152 | 4.0 | 10.3 | 34.3 | 26.1 | 25.3 | 137 | 7.2 | 9.8 | 21.8 | 30.5 | 30.7 |
| Moderate smoker | 232 | 7.4 | 16.0 | 31.6 | 27.4 | 17.5 | 262 | 7.7 | 10.8 | 27.9 | 35.4 | 18.3 |
| Heavy smoker | 209 | 9.0 | 20.5 | 30.8 | 22.1 | 17.7 | 191 | 7.0 | 16.3 | 28.0 | 25.4 | 23.3 |

### *3.7 Smoking and exercise*

Smoking and lack of exercise are two of the big risk factors for coronary heart disease. The government guideline is that moderate or vigorous exercise of at least 30 minutes duration should be undertaken at least 5 times per week. In this section, differences in how well this target has been achieved by smoking status and the number of cigarettes smoked will be examined.

***Table 3.37*** shows the age-standardised percentages exercising vigorously or moderately for at least 30 minutes by the frequency of such exercise, gender and smoking status, while ***Figure 3.33*** shows the age-standardised percentage of respondents that are achieving the guideline amount.

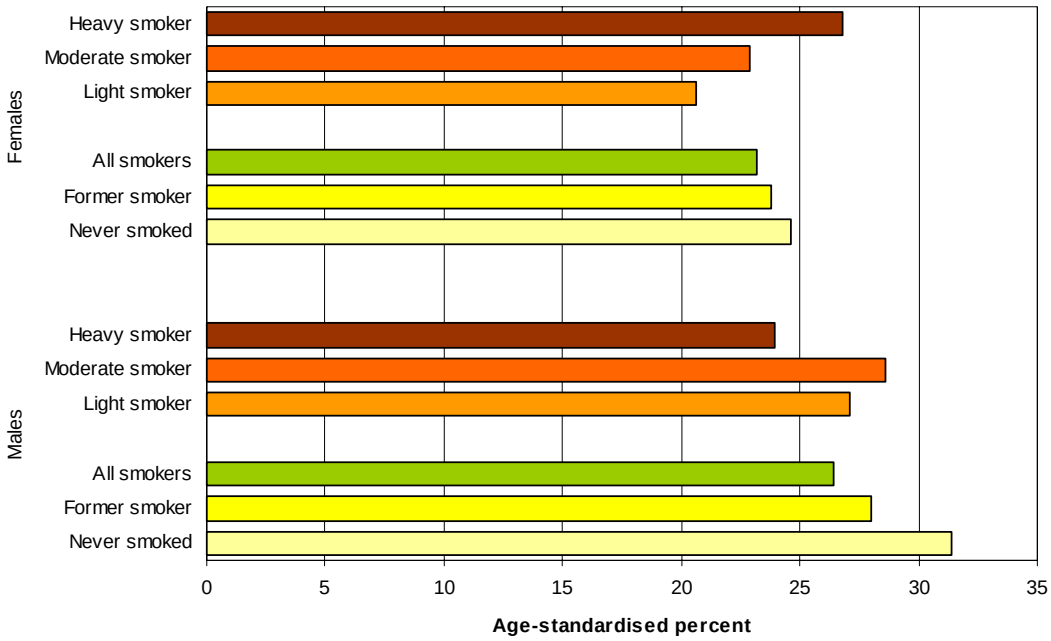
***Table 3.37: Weekly frequency of moderate or vigorous exercise lasting at least 30 minutes by smoking status (age-standardised percent)***

| Gender and smoking status | Total | Weekly frequency of moderate or vigorous exercise lasting at least 30 minutes (%) | | | |
|---|---|---|---|---|---|
| | | 5 or more times (guideline amount) | Less than 5 times | Light exercise only | Never exercise |
| ***Males*** | | | | | |
| Never smoked | 757 | 31.4 | 44.7 | 15.8 | 8.1 |
| Former smoker | 525 | 28.0 | 41.6 | 22.6 | 7.8 |
| All non-smokers | 1,282 | 31.3 | 42.8 | 17.9 | 8.0 |
| All smokers | 653 | 26.4 | 40.3 | 22.1 | 11.1 |
| Light smoker | 153 | 27.1 | 46.5 | 19.7 | 6.7 |
| Moderate smoker | 237 | 28.6 | 42.2 | 18.5 | 10.7 |
| Heavy smoker | 211 | 23.9 | 34.0 | 26.4 | 15.8 |
| ***Females*** | | | | | |
| Never smoked | 939 | 24.6 | 43.2 | 26.8 | 5.4 |
| Former smoker | 487 | 23.8 | 45.0 | 24.4 | 6.8 |
| All non-smokers | 1,426 | 24.8 | 43.3 | 25.6 | 6.3 |
| All smokers | 609 | 23.2 | 38.9 | 27.0 | 10.8 |
| Light smoker | 136 | 20.6 | 45.5 | 23.8 | 10.2 |
| Moderate smoker | 259 | 22.9 | 40.3 | 24.6 | 12.3 |
| Heavy smoker | 191 | 26.8 | 34.1 | 31.7 | 7.4 |

Men were more likely than women to meet the recommended exercise guideline for each smoking category except heavy smokers, where the percentage in women (27%) exceeds that in men (24%). Among men, non-smokers were more likely to meet the target (31%) than smokers (26%) with those that had never smoked having the highest percentage meeting the target (31%) and heavy smokers the lowest percentage (24%). Heavy smoking men also had the highest percentages that only took light exercise (26%) or who never exercised (16%).

Among women, the differences between smokers and non-smokers were smaller, with 25% of non-smokers and 23% of smokers meeting the exercise recommendations. Unlike in men, heavy smoking women were more likely to meet the guideline amount (27%) than moderate smokers (23%) or light smokers (21%). This may be associated with attitudes to body image, whereby some women give their reason for not stopping smoking as not wanting to put on weight. If these 'body-conscious' women are disproportionately heavy smokers this may help explain this apparent anomaly. At the same time heavy smoking women had the highest percentage only taking light exercise (32%) although the lowest percentage among smokers never exercising (7%).

***Figure 3.33: age-standardised percentage of respondents that achieve the government exercise guideline of 30 minutes moderate or vigorous exercise at least 5 times per week, by gender and smoking status***



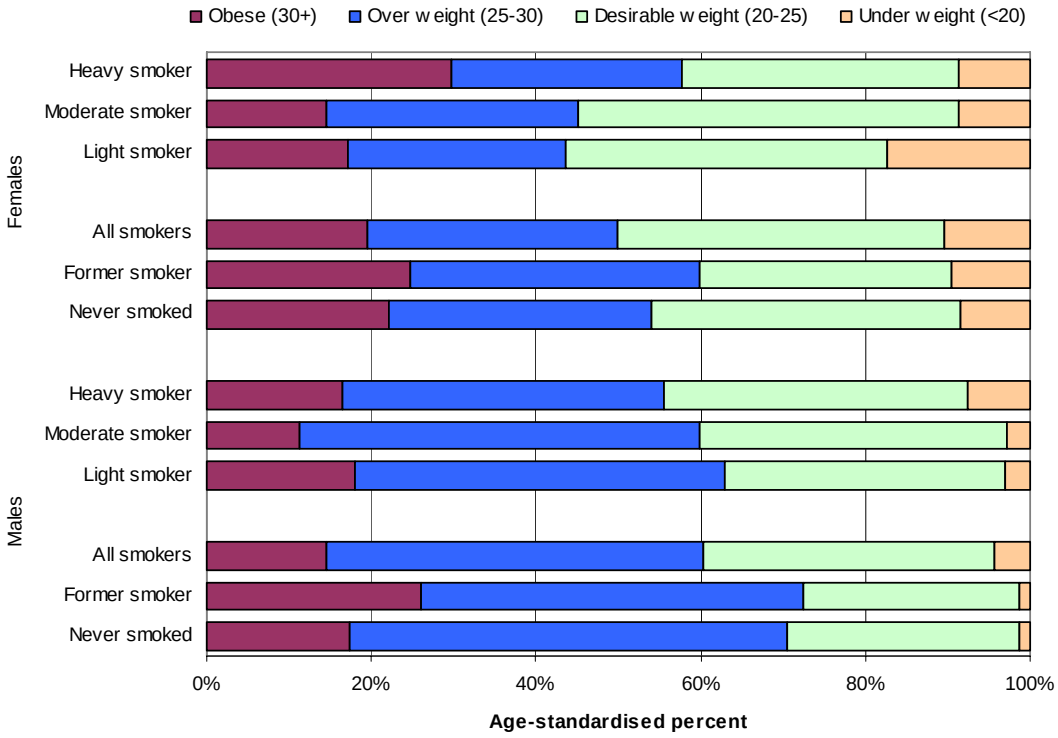

The majority of men and women in each smoking category undertook some moderate or vigorous exercise lasting at least 30 minutes each week. Among non-smokers the percentages were 74% of men and 68% of women, while among smokers this fell to 67% of men and 62% of women. The lowest percentages were seen in heavy smokers (58% of men and 61% of women), while the highest percentage in men was in those that had never smoked (76%); in women the highest percentage was in former smokers (69%).

None of the differences between smokers and non-smokers were statistically significant with the exception of the percentage of women that never exercised, which was significantly higher in smokers (11%) than non-smokers (6%).

### *3.8 Smoking and obesity*

Although cigarettes are sometimes used as an appetite suppressant (and therefore perceived as an aid to not putting on weight) many smokers are less active, drink more alcohol and eat less healthy diets than non-smokers. Therefore we might expect BMIs to be higher for smokers than for non-smokers. ***Figure 3.34*** and ***Table 3.38*** show the age-standardised percentages of respondents in each BMI category by gender and smoking status. The associations between smoking and BMI are less clear-cut than for some of the characteristics examined in previous sections.

***Figure 3.34: Body mass index categories by gender and smoking status (age-standardised percent)***




Looking first at men, smokers were more likely to be underweight (4%) than non-smokers (2%), more likely to be a desirable weight (35% compared with 28%) and less likely to be overweight (45% compared with 50%) or obese (15% compared with 20%). With the exception of the overweight, these differences were all statistically significant. Former smokers were the men most likely to be obese (26%), while those that had never smoked were the most likely to be overweight (53%). Heavy smokers were the most likely to be underweight (8%) and the least likely to be overweight (39%). Men that smoked were 15% less likely to be overweight or obese than men that did not smoke, whilst heavy smokers were 11% less likely to be overweight or obese than light smokers.

***Table 3.38: Body mass index categories by smoking status (age-standardised percent)***

| Gender and smoking status | Total | Body mass index (%) | | | |
|---|---|---|---|---|---|
| | | Under weight | Desirable weight | Over weight | Obese |
| ***Males*** | | | | | |
| Never smoked | 723 | 1.3 | 28.2 | 53.3 | 17.3 |
| Former smoker | 516 | 1.4 | 26.1 | 46.4 | 26.1 |
| All non-smokers | 1,239 | 1.6 | 28.0 | 50.3 | 20.1 |
| All smokers | 633 | 4.3 | 35.4 | 45.8 | 14.6 |
| Light smoker | 152 | 3.1 | 34.1 | 44.7 | 18.1 |
| Moderate smoker | 229 | 2.9 | 37.3 | 48.5 | 11.3 |
| Heavy smoker | 204 | 7.6 | 36.8 | 39.2 | 16.4 |
| ***Females*** | | | | | |
| Never smoked | 841 | 8.5 | 37.5 | 31.9 | 22.1 |
| Former smoker | 450 | 9.5 | 30.7 | 35.1 | 24.8 |
| All non-smokers | 1,291 | 8.7 | 35.3 | 32.5 | 23.5 |
| All smokers | 580 | 10.3 | 39.8 | 30.4 | 19.4 |
| Light smoker | 131 | 17.4 | 39.0 | 26.4 | 17.2 |
| Moderate smoker | 251 | 8.6 | 46.2 | 30.6 | 14.6 |
| Heavy smoker | 180 | 8.6 | 33.7 | 27.9 | 29.8 |

Patterns among women were similar, with smokers more likely to be underweight (10%) than non-smokers (9%); more likely to be a desirable weight (40% compared with 35% among non-smokers) and less likely to be overweight (30% compared with 33% among non-smokers) or obese (19% compared with 24% among non-smokers), although none of these differences were statistically significant. Unlike in men, light smoking women were the most likely to be underweight (17%), with moderate smokers the most likely to be a desirable weight (46%), former smokers the most likely to be overweight (35%) and heavy smokers the most likely to be obese (at 30% this was almost double the percentage of other smokers who were obese, and statistically significant). Overall, women who smoke were 11% less likely than non-smokers to be overweight or obese, whilst heavy smokers were one third more likely than light smokers to be overweight or obese. Former smokers were 20% more likely than current smokers to be overweight or obese.

## *3.9 Smoking and social capital*

Social capital is defined in terms of the social connections between people. Various indicators of social capital may be used. In the Hull 2007 health and lifestyle survey, social capital questions were asked related to feelings of safety when out and about in the local community; civic engagement; trust and neighbourliness of local communities; social networks; social support. These will each be examined in relation to smoking status.

### 3.9.1 Safety

***Table 3.39*** shows the age-standardised percentage of smokers and non-smokers who feel safe when walking alone in the daytime in their local areas. More men than women felt very safe or fairly safe when walking alone in their local area during the daytime, among both smokers and non-smokers, although differences between the genders were small. Higher percentages of non-smokers felt very safe or fairly safe in the daytime, with the difference between smokers and non-smokers greater among women than men. One in six men that smoked felt unsafe or never went out, compared with almost one in four women that smoked. The differences in age-standardised percentages that felt unsafe or never went out between smokers and non-smokers were statistically significant for each gender.

***Table 3.39: Perceptions of personal safety in local area during daytime by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How safe do you feel walking alone in this area during daytime? (%) | |
|---|---|---|---|
| | | Very / fairly safe | A bit / fairly unsafe / never goes out |
| ***Males*** | | | |
| All non-smokers | 1,266 | 88.3 | 11.7 |
| All Smokers | 644 | 83.0 | 17.0 |
| ***Females*** | | | |
| All non-smokers | 1,417 | 86.1 | 13.9 |
| All Smokers | 606 | 76.7 | 23.3 |

***Table 3.40*** shows the age-standardised percentages of smokers and non-smokers that felt safe when walking alone in their local area after dark.

***Table 3.40: Perceptions of personal safety in local area after dark by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How safe do you feel walking alone in this area after dark? (%) | | |
|---|---|---|---|---|
| | | Very / fairly safe | A bit unsafe | Very unsafe / never goes out |
| ***Males*** | | | | |
| All non-smokers | 1,251 | 58.2 | 27.8 | 14.0 |
| All Smokers | 632 | 54.0 | 26.1 | 20.0 |
| ***Females*** | | | | |
| All non-smokers | 1,403 | 34.3 | 36.2 | 29.6 |
| All Smokers | 589 | 30.8 | 29.2 | 40.0 |

Far fewer respondents felt very safe or fairly unsafe walking alone after dark than during the daytime, with greater differences between the genders.

Among men, 54% of smokers and 58% of non-smokers felt very or fairly safe walking alone after dark, compared with 31% and 34% respectively of smoking and non-smoking women. Among men, 20% of smokers felt very unsafe or never went out after dark, compared with 14% of non-smokers. Among women, 40% of smokers felt very unsafe walking alone or never went out after dark, compared with 30% of non-smokers. These differences in age-standardised percentages that felt very unsafe or never went out between smokers and non-smokers were statistically significant for each gender.

### 3.9.2 Civic engagement

Three measures of civic engagement, by smoking status and gender are presented in ***Table 3.41***. More non-smokers than smokers felt well informed about issues affecting their local area. The largest difference between smokers and non-smokers was seen in women, amongst whom 63% of non-smokers felt well informed, statistically significantly higher than the 50% of smokers who felt well informed. Among smokers, men were more likely to feel well informed about local issues (54%) than women (50%), while among non-smokers women were more likely to feel well informed (63%) than men (54%).

***Table 3.41: Measures of civic engagement by smoking status and gender (age-standardised percentages)***

| Measure and smoking status | Males | | Females | |
|---|---|---|---|---|
| | Total | Yes (%) | Total | Yes (%) |
| ***Well informed about issues affecting your area?*** | | | | |
| Non-smokers | 1,026 | 58.7 | 1,147 | 63.2 |
| Smokers | 511 | 54.3 | 505 | 50.4 |
| ***Able to influence decisions affecting your area?*** | | | | |
| Non-smokers | 924 | 25.1 | 975 | 23.1 |
| Smokers | 465 | 26.7 | 417 | 19.7 |
| ***Involved in any local organisations over the past three years?*** | | | | |
| Non-smokers | 1,254 | 6.7 | 1,403 | 8.7 |
| Smokers | 634 | 5.8 | 595 | 3.5 |

Differences in age-standardised percentages of smokers and non-smokers feeling they were able to influence decisions affecting their local area were smaller, with higher percentages in men than women. Among men just over one quarter of smokers and non-smokers felt they were able to influence decisions affecting their local area, while among women 20% of smokers and 23% of non-smokers felt able to influence decisions affecting their local area.

Few respondents had been involved in any local organisations over the preceding three years. Age-standardised percentages among men were similar for smokers (6%) and non-smokers (7%). In women they differed more, with 4% of smokers and 9% of non-smokers having been involved in

local organisations over the preceding three years, this difference being statistically significant.

Differences between smokers and non-smokers in terms of actions taken to solve a local problem were fewer among men than women (***Table 3.42***). Among men, similar percentages of smokers (32%) and non-smokers (32%) had taken some action to solve a local problem; while among women more non-smokers (35%) than smokers (31%) had taken some action.

***Table 3.42: Any actions taken in attempt to solve a local problem by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | Any actions taken in attempt to solve a local problem? (%) | | | |
|---|---|---|---|---|---|
| | | Acted to solve a problem | Thought about it, but took no action | No action taken | No problem to solve |
| ***Males*** | | | | | |
| All non-smokers | 1,264 | 31.1 | 9.9 | 53.6 | 5.4 |
| All Smokers | 642 | 32.1 | 11.9 | 49.3 | 6.7 |
| ***Females*** | | | | | |
| All non-smokers | 1,389 | 35.4 | 12.7 | 45.4 | 6.5 |
| All Smokers | 592 | 30.7 | 14.4 | 48.4 | 6.4 |

Differences between smokers and non-smokers in the perception of levels of anti-social and criminal behaviour are explored in ***Table 3.43*** to ***Table 3.45***. Smokers were statistically significantly more likely than non-smokers to perceived crime in their area to be a very big problem, and statistically significantly less likely to perceive crime in their area as a minor problem (***Table 3.43***).

***Table 3.43: How big a problem is crime in your area by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How big a problem is crime in your area? (%) | | | |
|---|---|---|---|---|---|
| | | Very big problem | Fairly big problem | Minor problem | Not a problem |
| ***Males*** | | | | | |
| All non-smokers | 1,150 | 13.2 | 28.9 | 46.5 | 11.4 |
| All Smokers | 591 | 21.0 | 30.9 | 37.0 | 11.1 |
| ***Females*** | | | | | |
| All non-smokers | 1,215 | 10.4 | 32.3 | 49.3 | 8.1 |
| All Smokers | 551 | 21.8 | 36.4 | 34.1 | 7.6 |

More than half of smokers perceived crime to be a very big or fairly big problem in their area. Among men, 52% of smokers and 42% of non-smokers perceived crime to be a very big or fairly big problem in their area; whilst among women comparable figures were 58% of smokers and 43% of non-smokers. Only one in nine men and one in twelve women felt that crime was not a problem in their area, with slightly higher percentages among non-smokers).

The age-standardised percentages perceiving verbal or physical threat or aggression to be a very big problem in their area were lower than for crime, but the differences between smokers and non-smokers were greater, and statistically significant (***Table 3.44***).

***Table 3.44: How big a problem is verbal or physical threat or aggression in your area by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How big a problem is verbal or physical threat or aggression in your area? (%) | | | |
|---|---|---|---|---|---|
| | | Very big problem | Fairly big problem | Minor problem | Not a problem |
| ***Males*** | | | | | |
| All non-smokers | 1,151 | 7.6 | 18.3 | 38.2 | 35.8 |
| All Smokers | 592 | 13.4 | 22.2 | 35.3 | 29.0 |
| ***Females*** | | | | | |
| All non-smokers | 1,244 | 5.7 | 17.2 | 42.9 | 34.2 |
| All Smokers | 542 | 12.6 | 22.3 | 37.3 | 27.8 |

Among men 13% of smokers perceived this to be a very big problem and 22% perceived it to be a fairly big problem, compared with 8% and 18% respectively of non-smokers. Among women verbal or physical threat or aggression was perceived to be a very problem in their area by 13% of smokers and a fairly big problem by 22%, compared with 6% and 17% respectively of non-smokers. Just over one third of non-smoking men and women felt their was no problem in the area with verbal or physical threat or aggression, while 29% of men that smoked and 28% of women that smoked also felt it was not a problem.

Few respondents felt that graffiti or vandalism were a very big problem in their area, although higher percentages of smokers felt that it was than did non-smokers (***Table 3.45***). The difference between smokers and non-smokers was greatest in women, where 12% of smokers felt graffiti or vandalism to be a very big problem (statistically significantly higher than the 6% of non-smokers) and 30% of smokers felt it was a fairly big problem (statistically significantly higher than the 21% of non-smokers). Women that smoked were statistically significantly less likely to see graffiti or vandalism as only a minor problem in their area (39%) than non-smoking women (52%).

***Table 3.45: How big a problem is graffiti or vandalism in your area by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How big a problem is graffiti or vandalism in your area? (%) | | | |
|---|---|---|---|---|---|
| | | Very big problem | Fairly big problem | Minor problem | Not a problem |
| ***Males*** | | | | | |
| All non-smokers | 1,176 | 8.1 | 20.4 | 48.5 | 23.0 |
| All Smokers | 589 | 10.8 | 23.2 | 44.2 | 21.8 |
| ***Females*** | | | | | |
| All non-smokers | 1,283 | 5.6 | 20.5 | 51.9 | 22.1 |
| All Smokers | 554 | 12.3 | 30.4 | 38.6 | 18.7 |

### 3.9.3 Trust and neighbourliness

Differences in the age-standardised percentages of smokers and non-smokers that trusted the people living in their neighbourhoods are shown in ***Table 3.46***. Men were slightly less likely than women to trust the people living in their neighbourhoods, while smokers were less likely to trust the people living in their neighbourhoods than non-smokers. Among men, 48% of smokers trusted most or few people living in their neighbourhood and 10% trusted none, compared with 59% of non-smokers trusting most or some and 7% trusting none. Among women, 54% of smokers trusted most or some of the people in their neighbourhood while 5% trusted none, compared with 62% of non-smokers trusting most or some and 4% trusting none.

***Table 3.46: Trust in people in neighbourhood by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | How many of the people in your neighbourhood do you trust? (%) | | | |
|---|---|---|---|---|---|
| | | Most | Some | A few | None |
| ***Males*** | | | | | |
| All non-smokers | 1,167 | 34.9 | 23.6 | 34.9 | 6.5 |
| All Smokers | 571 | 27.7 | 20.7 | 41.5 | 10.1 |
| ***Females*** | | | | | |
| All non-smokers | 1,287 | 35.8 | 25.7 | 35.0 | 3.5 |
| All Smokers | 542 | 30.3 | 23.3 | 41.0 | 5.4 |

More than two thirds of all respondents felt that their neighbourhood was one where neighbours looked out for each other. However, smokers were slightly less likely than non-smokers to feel that their neighbourhood was one where neighbours looked out for each other (***Table 3.47***), with men less likely to feel this than women regardless of smoking status. The difference between smokers and non-smokers with regard to feeling that neighbours looked out for each other was greatest in women. One third of women who smoked felt

that neighbours did not look out for each other, which was statistically significantly higher than the 22% of non-smokers who felt that neighbours did not look out for each other.

***Table 3.47: Neighbourhood an area where neighbours look out for each other, by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | Do neighbours look out for each other? (%) | |
|---|---|---|---|
| | | Yes | No |
| ***Males*** | | | |
| All non-smokers | 1,046 | 71.0 | 29.0 |
| All Smokers | 516 | 67.1 | 32.9 |
| ***Females*** | | | |
| All non-smokers | 1,175 | 78.1 | 21.9 |
| All Smokers | 509 | 67.2 | 32.8 |

### 3.9.4 Social networks

The overwhelming majority of respondents (more than 98%), both men and women, smokers and non-smokers spoke to family members, friends or neighbours at least once a week (***Table 3.48***). Smokers were more likely than non-smokers to speak to family members, friends and neighbours on most days, in both men and women, although non-smokers were more likely to speak to family members, friends and neighbours on a weekly basis (that is on 1-4 days per week).

Women were more likely to speak to family members (65% of smokers and 58% of non-smokers) on most days than men (43% of both smokers and non-smokers). Differences between men and women in speaking to friends or neighbours were smaller.

***Table 3.48: Frequency of speaking to family members, friends or neighbours by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | Frequency of speaking to family members, friends or neighbours? (%) | | | |
|---|---|---|---|---|---|
| | | Most days[1] | Weekly[2] | Monthly[3] | Rarely[4] |
| ***Males*** | | | | | |
| ***Family members*** | | | | | |
| All non-smokers | 1,276 | 42.7 | 46.7 | 7.9 | 2.7 |
| All Smokers | 650 | 43.3 | 40.5 | 11.5 | 4.7 |
| ***Friends (not family or neighbours)*** | | | | | |
| All non-smokers | 1,276 | 47.8 | 44.3 | 6.0 | 1.9 |
| All Smokers | 649 | 53.9 | 38.1 | 6.5 | 1.6 |

| Gender and smoking status | Total | Frequency of speaking to family members, friends or neighbours? (%) | | | |
|---|---|---|---|---|---|
| | | Most days[1] | Weekly[2] | Monthly[3] | Rarely[4] |
| ***Males*** | | | | | |
| ***Neighbours (not family or friends)*** | | | | | |
| All non-smokers | 1,274 | 23.3 | 54.9 | 16.3 | 5.5 |
| All Smokers | 646 | 26.3 | 51.2 | 14.5 | 8.0 |
| ***Family members, friends or neighbours*** | | | | | |
| All non-smokers | 1,280 | 68.1 | 30.5 | 1.0 | 0.4 |
| All Smokers | 651 | 73.0 | 25.4 | 1.6 | 0.0 |
| ***Females*** | | | | | |
| ***Family members*** | | | | | |
| All non-smokers | 1,416 | 58.1 | 35.6 | 4.6 | 1.8 |
| All Smokers | 601 | 65.4 | 28.1 | 4.3 | 2.2 |
| ***Friends (not family or neighbours)*** | | | | | |
| All non-smokers | 1,417 | 48.6 | 42.8 | 6.7 | 1.9 |
| All Smokers | 596 | 49.8 | 38.7 | 8.2 | 3.3 |
| ***Neighbours (not family or friends)*** | | | | | |
| All non-smokers | 1,413 | 24.0 | 56.3 | 14.6 | 5.1 |
| All Smokers | 596 | 28.1 | 51.2 | 16.6 | 4.1 |
| ***Family members, friends or neighbours*** | | | | | |
| All non-smokers | 1,427 | 76.4 | 22.8 | 0.6 | 0.2 |
| All Smokers | 603 | 81.0 | 17.7 | 1.1 | 0.2 |

1 5-7 days/week; 2 1-4 days/week; 3 1-2 days/month; 4 1-2 days/year or less

### 3.9.5 Social support

There were few differences in the age-standardised percentages of smokers and non-smokers that would be able to ask someone for help if they were ill in bed (***Table 3.49***).

***Table 3.49: Able to ask someone for help if ill in bed, by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | Able to ask someone for help if ill in bed? (%) | |
|---|---|---|---|
| | | Yes | No |
| ***Males*** | | | |
| All non-smokers | 1,154 | 95.8 | 4.2 |
| All Smokers | 572 | 93.9 | 6.1 |
| ***Females*** | | | |
| All non-smokers | 1,294 | 97.0 | 3.0 |
| All Smokers | 545 | 95.4 | 4.6 |

Differences in the number of people that smokers and non-smokers could turn to for comfort and support in the event of a serious crisis were generally small

(***Table 3.50***). Non-smokers were slightly more likely to have at least 5 people they could turn to for comfort and support in the event of a serious crisis (66% of men; 70% of women) than smokers (59% of men; 62% of women). The only statistically significant difference between smokers and non-smokers was in the percentage of women that could call upon at least 10 people for comfort and support in the event of a serious crisis (27% of smokers and 37% in non-smokers).

***Table 3.50: How many people can you turn to for comfort and support in the event of a serious crisis by smoking status and gender (age-standardised percentages)***

| Gender and smoking status | Total | Number of people that can turn to for comfort and support in the event of a serious crisis (%) | | | |
|---|---|---|---|---|---|
| | | None | 1 to 4 | 5-9 | 10+ |
| ***Males*** | | | | | |
| All non-smokers | 1,283 | 4.5 | 29.4 | 34.8 | 31.3 |
| All Smokers | 647 | 5.4 | 35.4 | 29.6 | 29.6 |
| ***Females*** | | | | | |
| All non-smokers | 1,415 | 3.9 | 26.5 | 32.2 | 37.4 |
| All Smokers | 612 | 4.5 | 33.9 | 34.3 | 27.3 |

### *3.10 Predicting people who smoke*

In the preceding sections we have looked at various health and behavioural characteristics of respondents and have examined differences in these characteristics between smokers and non-smokers, plus other smoking categories. In this section we will look at it the other way around. That is, can we predict who is likely to be a smoker based on these other characteristics, as collected through the Hull 2007 health and lifestyle survey? To do this we can use logistic regression models. The results of these models are expressed as odds ratios, which for these analyses are the age-adjusted odds of being a smoker divided by the odds of not being a smoker for each level of the factor of interest (see ***Appendix: Statistical terms*** starting on ***page 101*** for more information).

The results of these analyses are presented in ***Table 3.51*** (men) and ***Table 3.52*** (women). Factors were included in these tables if the p-value for the factor as a whole (e.g. deprivation) was statistically significant at the p=0.01 level. Individual levels of the factor (e.g. the most deprived quintile) were considered to be statistically significantly different to the comparison group (e.g. the least deprived quintile) if the p-value for the comparison was less than 0.05. All analyses were adjusted for age, and analysed separately by sex, as both age and sex are confounders for smoking and many of the factors we wish to look at. That is, age and sex are associated both with smoking and with many of the explanatory factors we wish to examine (e.g. obesity, alcohol consumption, diet and exercise). Although each of the factors in these tables were statistically significant they did not explain most of the observed differences.

***Table 3.51: Odds ratios of smoking in men adjusted for age***

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| Least deprived quintile | Second least deprived | 1.38 (1.00, 1.90) | 0.047 | Men in second least deprived quintile have borderline significant increase in odds of smoking (38% higher) than men in the least deprived quintile |
| | Middle quintile | 1.65 (1.19, 2.29) | 0.002 | Men in middle quintile have odds of smoking 65% higher than men in least deprived quintile |
| | Second most deprived quintile | 2.43 (1.74, 3.40) | <0.001 | Men in second most deprived quintile have odds of smoking almost 2 and a half times higher than men in the least deprived quintile |
| | Most deprived quintile | 2.93 (2.12, 4.06) | <0.001 | Men in the most deprived quintile have odds of smoking almost 3 times as high as men in the least deprived quintile |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| Estimated after tax household income £20,000+ | £10,000 – £19,999 | 1.23 (0.92, 1.65) | 0.166 | No statistically significant difference in odds of smoking between men living in households with estimated after-tax income of £10,000-£19,999 and £20,000 |
| | <£10,000 | 1.98 (1.43, 2.75) | <0.001 | Men with household incomes <£10,000 have odds of smoking twice as high as men with household incomes £20,000 or more |
| Employment status: working | Retired | 0.96 (0.59, 1.58) | 0.879 | Retired men had similar odds of smoking as men who were working |
| | Student | 1.26 (0.70, 2.27) | 0.437 | No statistically significant difference in odds of smoking between men who were students and men who were working |
| | Looking after family/ home | 1.46 (0.69, 3.09) | 0.321 | No statistically significant difference in odds of smoking between men who were looking after the family/home and men who were working |
| | Unemployed | 1.87 (1.35, 2.59) | <0.001 | Unemployed men had odds of smoking almost twice as high as men who were working |
| | Long-term sick/ disabled | 2.18 (1.48, 3.21) | <0.001 | Men who were not working due to long-term illness/disability had odds of smoking more than twice as high as men who were working |
| Highest educational qualification: degree or higher | Post 16, below degree | 1.08 (0.77, 1.51) | 0.464 | No statistically significant difference on odds of smoking in men educated beyond age 16 but below degree level compared with men educated to degree level or higher |
| | O-level/CSE/GCSE | 1.31 (0.95, 1.82) | 0.102 | No statistically significant difference in odds of smoking between men educated to O-level/CSE/GCSE and men educated to degree level or higher |
| | None | 1.95 (1.39, 2.72) | <0.001 | Men with no qualifications had odds of smoking twice as high as men educated to degree level or higher |
| Degree to which daily activities are affected by health or disability: none | Mild | 1.44 (1.09, 1.90) | 0.010 | Men whose daily activities were mildly affected by health or disability had odds of smoking 1.44 times as high as men not affected |
| | Moderate | 1.40 (1.04, 1.88) | 0.027 | Men whose daily activities were moderately affected by health or disability had odds of smoking 1.4 times as high as men not affected |
| | Severe | 2.20 (1.64, 2.95) | <0.001 | Men whose daily activities were severely affected by health or disability had odds of smoking 2.2 times higher than men not affected |
| Mental health index: MHI 90-100 (best) | MHI 80-89 | 1.51 (1.13, 1.99) | 0.005 | Men with MHI 80-89 have odds of smoking 1.51 times higher than men with MHI 90-100 |
| | MHI 70-79 | 1.76 (1.30, 2.37) | <0.001 | Men with MHI 70-79 have odds of smoking 1.76 times higher than men with MHI 90-100 |
| | MHI 60-69 | 1.67 (1.16, 2.38) | 0.005 | Men with MHI 60-69 have odds of smoking 1.67 times higher than men with MHI 90-100 |
| | MHI 50-59 | 2.57 (1.75, 3.77) | <0.001 | Men with MHI 50-59 have odds of smoking 2.57 times higher than men with |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| | | | | MHI 90-100 |
| | MHI 0-49 (worst) | 2.69 (1.77, 4.10) | <0.001 | Men with MHI 0-49 have odds of smoking 2.69 times higher than men with MHI 90-100 |
| Health thermometer: 90-100 (best) | 80-89 | 1.44 (1.10, 1.87) | 0.007 | Men who chose 80-89 on the health thermometer had odds of smoking 1.44 times higher than men who chose 90-100 |
| | 70-79 | 1.77 (1.33, 2.36) | <0.001 | Men who chose 70-79 on the health thermometer had odds of smoking 1.77 times higher than men who chose 90-100 |
| | 50-69 | 2.17 (1.60, 2.93) | <0.001 | Men who chose 50-69 on the health thermometer had odds of smoking 2.17 times higher than men who chose 90-100 |
| | 0-49 (worst) | 2.30 (1.55, 3.40) | <0.001 | Men who chose 0-49 on the health thermometer had odds of smoking 2.3 times higher than men who chose 90-100 |
| Self-reported health: Excellent | Very good | 1.23 (0.88, 1.71) | 0.232 | No statistically significant difference in odds of smoking between men reporting very good health and men reporting excellent health |
| | Good | 1.55 (1.12, 2.15) | 0.009 | Men reporting good health had odds of smoking 1.55 times higher than men reporting excellent health |
| | Fair | 2.15 (1.47, 3.16) | <0.001 | Men reporting fair health had odds of smoking more than double men reporting excellent health |
| | Poor | 3.53 (2.12, 5.89) | <0.001 | Men reporting poor health had odds of smoking 3.53 times higher than men reporting excellent health |
| Frequency of alcohol consumption: Never | Less than 1 day/ month | 1.64 (1.13, 2.37) | 0.009 | Men reporting drinking alcohol less than 1 day/month had odds of smoking 1.64 times higher than men reporting never drinking alcohol |
| | 1-3 days/month | 0.93 (0.65, 1.34) | 0.705 | No statistically significant difference in odds of smoking in men reporting drinking alcohol 1-3 days/month compared with men reporting never drinking alcohol |
| | 1-3 days/week | 1.56 (1.15, 2.12) | 0.004 | Men reporting drinking alcohol 1-3 days/week had odds of smoking 1.56 times higher than men reporting never drinking alcohol |
| | 4-6 days/week | 2.32 (1.58, 3.40) | <0.001 | Men reporting drinking alcohol 4-6 days/week had odds of smoking 2.32 times higher than men reporting never drinking alcohol |
| | Everyday | 2.68 (1.80, 3.98) | <0.001 | Men reporting drinking alcohol everyday had odds of smoking 2.68 times higher than men reporting never drinking alcohol |
| Not regular binge drinker | Regular binge drinker | 2.37 (1.92, 2.92) | <0.001 | Men regularly binge drinking had odds of smoking more than double men not regularly binge drinking |
| Weekly units 0-21 | Weekly units >21 | 2.19 (1.75, 2.76) | <0.001 | Men exceeding 14 units of alcohol per week had odds of smoking more than |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| | | | | double men drinking 0-14 units per week |
| Not a 'problem' drinker | 'Problem' drinker | 2.21 (1.80, 2.72) | <0.001 | Men defined as 'problem' drinkers had odds of smoking more than double men not 'problem' drinkers |
| Healthy diet eaten | Healthy diet not eaten | 2.08 (1.64, 2.63) | <0.001 | Men reporting not eating a healthy diet had odds of smoking more than double men reporting eating a healthy diet |
| | Lack of knowledge about healthy diets | 2.36 (1.71, 3.25) | <0.001 | Men reporting knowledge on healthy eating lacking had odds of smoking more than double men reporting eating a healthy diet |
| Eaten healthier over past year | Not eaten healthier over past year | 1.77 (1.40, 2.23) | 0.006 | Men reporting not eating healthier over the past year had odds of smoking 1.77 times higher than men reporting eating healthier over the past year |
| Daily portions of fruits and vegetables: 5+ | 3-4 portions/day | 1.57 (1.18, 2.10) | 0.002 | Men eating 3-4 portions of fruits and vegetables per day had odds of smoking 1.57 times higher than men eating 5+ portions per day |
| | 0-2 portions/day | 2.93 (2.20, 3.91) | <0.001 | Men eating 0-2 portions of fruits and vegetables per day had odds of smoking almost triple men eating 5+ portions per day |
| Consumption of ready meals: rare (<1 day/week) | Regular (1-2 days/ week) | 1.23 (0.98, 1.55) | 0.072 | No statistically significant difference in odds of smoking in men eating ready meals regularly compared with men rarely eating such meals |
| | Often (3+ days/week) | 2.04 (1.49, 2.79) | <0.001 | Men eating ready meals often had odds of smoking twice as high as men rarely eating such meals |
| Consumption of takeaways: rare (<1 day/week) | Regular (1-2 days/ week) | 1.25 (1.02, 1.54) | 0.035 | Men eating takeaways regularly had odds of smoking 25% higher than men rarely eating such meals |
| | Often (3+ days/week) | 1.72 (1.22, 2.42) | 0.002 | Men eating takeaways often had odds of smoking 72% higher than men rarely eating such meals |
| Consumption of meals cooked with some fresh ingredients: often (3+ days/ week) | Regular (1-2 days/ week) | 1.23 (0.98, 1.54) | 0.068 | No statistically significant difference in odds of smoking in men eating meals cooked using some fresh ingredients regularly compared to men often eating such meals |
| | Rare (<1 day/week) | 1.58 (1.22, 2.03) | <0.001 | Men rarely eating meals cooked using some fresh ingredients had odds of smoking 58% higher than men often eating such meals |
| Consumption of meals cooked from scratch using fresh ingredients: often (3+ days/ week) | Regular (1-2 days/ week) | 1.08 (0.87, 1.36) | 0.484 | No statistically significant difference in odds of smoking in men regularly eating meals cooked from scratch using fresh ingredients compared with men often eating such meals |
| | Rare (<1 day/week) | 1.50 (1.16, 1.93) | 0.002 | Men rarely eating meals cooked from scratch using some fresh ingredients had odds of smoking 50% higher than men often eating such meals |
| Moderate or vigorous (30mins.) | < 5 times per week | 1.15 (0.91, 1.46) | 0.237 | No statistically significant difference in odds of smoking in men taking moderate or vigorous exercise (30min. sessions) less than 5 times per week |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| | | | | compared with men doing so 5+ times per week |
| exercise: 5 times per week | Light exercise only | 1.55 (1.15, 2.09) | 0.004 | Men taking only light exercise had odds of smoking 55% higher than men taking moderate or vigorous exercise (30min. sessions) 5+ times per week |
| | Never exercise | 1.75 (1.20, 2.54) | 0.003 | Men never taking exercise had odds of smoking 75% higher than men taking moderate or vigorous exercise (30min. sessions) 5+ times per week |
| Body mass index: obese (BMI 30+) | Overweight (BMI 25-29) | 1.37 (0.99, 1.90) | 0.061 | Overweight men had odds of smoking 37% higher (borderline statistically significant) than obese men |
| | Healthy weight (BMI 20-24) | 1.78 (1.28, 2.48) | 0.001 | Men with a healthy weight had odds of smoking 78% higher than obese men |
| | Underweight (<20) | 5.35 (3.11, 9.22) | <0.001 | Underweight men had odds of smoking more than 5 times higher than obese men |
| Feels very or fairly safe when walking alone during daytime | A bit unsafe / very unsafe / never goes | 1.52 (1.16, 2.00) | 0.003 | Men who felt unsafe while walking alone during the day, or who never went out had odds of smoking 52% higher than men who felt fairly or very safe |
| Feels very or fairly safe when walking alone after dark | A bit unsafe | 0.99 (0.78, 1.25) | 0.932 | Odds of smoking in men who felt a bit unsafe when walking alone after dark were similar to men who felt fairly or very safe doing so |
| | Very unsafe / never goes | 1.54 (1.17, 2.03) | 0.002 | Men who felt very unsafe while walking alone after dark, or who never went out had odds of smoking 54% higher than men who felt fairly or very safe |
| Crime in local area: Minor problem | Very big problem | 1.98 (1.48, 2.65) | <0.001 | Men who felt crime in their area to be a very big problem had odds of smoking double that in men that felt crime to be a minor problem |
| | Fairly big problem | 1.34 (1.05, 1.71) | 0.019 | Men who felt crime in their area to be a fairly big problem had odds of smoking one third higher than men that felt crime to be a minor problem |
| | Not a problem | 1.23 (0.87, 1.73) | 0.239 | No statistically significant difference in odds of smoking in men who felt crime in their area was not a problem compared with men who felt crime to be a minor problem |
| Verbal or physical threat or aggression in local area: Not a problem | Very big problem | 1.89 (1.33, 2.68) | <0.001 | Men who felt verbal or physical threat or aggression in their area to be a very big problem had odds of smoking almost double that in men that felt there was no problem (89% higher) |
| | Fairly big problem | 1.31 (1.00, 1.73) | 0.053 | Men who felt verbal or physical threat or aggression in their area to be a fairly big problem had odds of smoking 31% higher (borderline statistically significant) than men that felt there was no problem |
| | Minor problem | 0.88 (0.69, 1.13) | 0.312 | No statistically significant difference in odds of smoking in men who felt verbal or physical threat or aggression in their area was only a minor big problem |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | Interpretation |
|---|---|---|---|---|
| | | | | compared with men that felt there was no problem |
| Number of people in your neighbourhood that you trust: Most of the people | Some of the people | 1.14 (0.85, 1.53) | 0.372 | No statistically significant difference in odds of smoking in men that trusted some of the people in their neighbourhood compared with men that trusted most of the people |
| | A few of the people | 1.56 (1.20, 2.01) | 0.001 | Men who only trusted a few of the people in their neighbourhood had odds of smoking 56% higher than men that trusted most of the people |
| | None of the people | 2.06 (1.36, 3.10) | 0.001 | Men who trusted none of the people in their neighbourhood had odds of smoking twice as high as men that trusted most of the people |
| Frequency of speaking to family members: Most days | Weekly | 0.86 (0.70, 1.06) | 0.170 | No statistically significant difference in odds of smoking in men that spoke to family members weekly compared with men that spoke to family members on most days |
| | Monthly | 1.43 (1.02, 2.00) | 0.040 | Men that spoke to family members only monthly had odds of smoking 43% higher than men that spoke to family members on most days |
| | Rarely | 1.68 (0.99, 2.84) | 0.053 | Men that rarely spoke to family members had odds of smoking 68% higher (borderline statistically significant) than men that spoke to family members on most days |

After adjusting for age, there was no significant difference in the odds of smoking in men for the following factors:

- Between men resident in the three localities
- Between men registered as disabled and men not registered as disabled
- Between men that felt well informed about things affecting their area and men that did not
- Between men that felt they could influence decisions affecting their area and men that did not
- Between men that had been involved in any local organisations over the preceding three years and men that had not
- Between men that had taken some action in an attempt to solve a local problem and men that had not
- Between men that felt graffiti and vandalism in their area was a very big problem, a fairly big problem, a minor problem or not a problem
- Between men that felt that neighbours in their area looked out for ach other and men that did not
- Between men that spoke to friends on most days, weekly, monthly or rarely

- Between men that spoke to neighbours on most days, weekly, monthly or rarely
- Between men that spoke to family members, friends or neighbours on most days, weekly, monthly or rarely
- Between men that could ask someone for help if they were ill in bed and men that could not
- Between men that had no one they could turn to for comfort and support in the event of a serious crisis and men that could turn to 1-4, 5-9 or 10 or more people

***Table 3.52: Odds ratios of smoking in women adjusted for age***

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| Least deprived quintile | Second least deprived | 1.36 (1.01, 1.83) | 0.041 | Women in second least deprived quintile have borderline significant increase in odds of smoking (36% higher) than women in the least deprived quintile |
| | Middle quintile | 1.50 (1.09, 2.08) | 0.014 | Women in middle quintile have odds of smoking 50% higher than women in least deprived quintile |
| | Second most deprived quintile | 3.28 (2.31, 4.65) | <0.001 | Women in second most deprived quintile have odds of smoking more than 3 times higher than women in the least deprived quintile |
| | Most deprived quintile | 3.97 (2.89, 5.46) | <0.001 | Women in the most deprived quintile have odds of smoking almost 4 times as high as women in the least deprived quintile |
| Estimated after tax household income £20,000+ | £10,000 – £19,999 | 1.93 (1.37, 2.71) | <0.001 | Women with household incomes £10,000-£19,999 have odds of smoking 2 times higher than women with household incomes £20,000 or more |
| | <£10,000 | 4.04 (2.84, 5.75) | <0.001 | Women with household incomes <£10,000 have odds of smoking 4 times higher than women with household incomes £20,000 or more |
| Employment status: working | Retired | 1.11 (0.73, 1.70) | 0.618 | No statistically significant difference in odds of smoking in retired women compared with women who were working |
| | Student | 0.47 (0.26, 0.86) | 0.015 | Women who were students had odds of smoking less than half of those in women who were working |
| | Looking after family/home | 1.74 (1.33, 2.28) | <0.001 | Women who were looking after the family/home had increased odds of smoking 1.74 times women who were working |
| | Unemployed | 1.64 (1.08, 2.48) | 0.019 | Women who were unemployed men had increased odds of smoking 1.64 times women men who were working |
| | Long-term sick/disabled | 4.56 (3.02, 6.90) | <0.001 | Women who were not working due to long-term illness/disability had odds of smoking more than 4 times as high as women who were working |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| Locality of residence: East | West locality | 1.07 (0.86, 1.33) | 0.569 | No statistically significant difference in odds of smoking in women resident in West locality compared with women resident in East locality |
| | North locality | 1.66 (1.31, 2.17) | <0.001 | Women resident in North locality had odds of smoking 1.66 times women resident in East locality |
| Highest educational qualification: degree or higher | Post 16, below degree | 1.41 (0.93, 2.13) | 0.103 | No statistically significant difference in odds of smoking between women educated beyond age 16 but below degree level and those educated to degree level or higher |
| | O-level/CSE/GCSE | 2.02 (1.43, 2.87) | <0.001 | Women qualified to O-level\CSE\GCSE level had odds of smoking double that in women educated to degree level or higher |
| | None | 4.09 (2.79, 6.00) | <0.001 | Women with no qualifications had odds ratio of smoking 4 times as high as women educated to degree level or higher |
| Degree to which daily activities are affected by health or disability: none | Mild | 0.99 (0.72, 1.34) | 0.924 | Odds of smoking in women whose daily activities were mildly affected by health or disability were similar to women not affected |
| | Moderate | 1.62 (1.19, 2.23) | 0.003 | Men whose daily activities were moderately affected by health or disability had odds of smoking 1.62 times higher than women not affected |
| | Severe | 2.45 (1.79, 3.35) | <0.001 | Women whose daily activities were severely affected by health or disability had odds of smoking 2.45 times higher than women not affected |
| Mental health index: MHI 90-100 (best) | MHI 80-89 | 1.01 (0.73, 1.40) | 0.949 | Odds of smoking in women with MHI 80-89 similar to women with the best mental health (MHI 90-100) |
| | MHI 70-79 | 1.11 (0.79, 1.56) | 0.553 | No statistically significant difference in odds of smoking between women with MHI 70-79 and women with the best mental health (MHI 90-100) |
| | MHI 60-69 | 1.25 (0.87, 1.80) | 0.229 | No statistically significant difference in odds of smoking between women with MHI 60-69 and women with the best mental health (MHI 90-100) |
| | MHI 50-59 | 1.99 (1.37, 2.87) | <0.001 | Women with MHI 50-59 have odds of smoking twice as high as women with the best mental health (MHI 90-100) |
| | MHI 0-49 (worst) | 3.01 (2.09, 4.35) | <0.001 | Women with the worst mental health (MHI 0-49) have odds of smoking three times as high as women with the best mental health (MHI 90-100) |
| Health thermometer: 90-100 (best) | 80-89 | 1.00 (0.76, 1.31) | 0.997 | Women who chose 80-89 on the health thermometer had odds of smoking the same as women who chose 90-100 |
| | 70-79 | 1.33 (0.99, 1.78) | 0.056 | Women who chose 70-79 on the health thermometer had odds of smoking one third higher than women who chose 90-100 (borderline statistically significant) |
| | 50-69 | 1.68 (1.25, 2.25) | <0.001 | Women who chose 50-69 on the health thermometer had odds of smoking |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| | | | | two thirds higher than women who chose 90-100 |
| | 0-49 (worst) | 2.82 (1.89, 4.21) | <0.001 | Women who chose 0-49 on the health thermometer had odds of smoking 2.82 times higher than women who chose 90-100 |
| Self-reported health: Excellent | Very good | 1.25 (0.87, 1.80) | 0.232 | No statistically significant difference in odds of smoking between women reporting very good health and women reporting excellent health |
| | Good | 1.27 (0.88, 1.83) | 0.199 | No statistically significant difference in odds of smoking between women reporting good health and women reporting excellent health |
| | Fair | 3.11 (2.09, 4.63) | <0.001 | Women reporting fair health had odds of smoking 3.11 times higher than women reporting excellent health |
| | Poor | 3.46 (2.02, 5.93) | <0.001 | Women reporting poor health had odds of smoking 3.46 times higher than women reporting excellent health |
| Activities not affected by long-term illness/ disability | Activities affected by long-term illness/disability | 2.11 (1.67, 2.67) | <0.001 | Women whose activities were affected by long-term illness/disability had odds of smoking more than double that of women whose activities were not so affected |
| Not registered as disabled | Registered as disabled | 1.93 (1.38, 2.69) | <0.001 | Women registered as disabled had odds of smoking almost double that of women not registered as disabled |
| Not regular binge drinker | Regular binge drinker | 1.75 (1.32, 2.32) | <0.001 | Women regularly binge drinking had odds of smoking 1.75 times higher than women not regularly binge drinking |
| Weekly units 0-14 | Weekly units >14 | 2.07 (1.46, 2.95) | <0.001 | Women exceeding 14 units of alcohol per week had odds of smoking more than double women drinking 0-14 units per week |
| Not a ‘problem’ drinker | ‘Problem’ drinker | 1.80 (1.39, 2.35) | <0.001 | Women defined as ‘problem’ drinkers had odds of smoking 1.8 times higher than women not ‘problem’ drinkers |
| Healthy diet eaten | Healthy diet not eaten | 2.09 (1.61, 2.70) | <0.001 | Women reporting not eating a healthy diet had odds of smoking more than double women reporting eating a healthy diet |
| | Lack of knowledge about healthy diets | 1.76 (1.18, 2.61) | 0.005 | Women reporting knowledge on healthy eating lacking had odds of smoking 1.76 times higher than women reporting eating a healthy diet |
| Eaten healthier over past year | Not eaten healthier over past year | 1.51 (1.12, 2.03) | 0.006 | Women reporting not eating healthier over the past year had odds of smoking 1.51 times higher than women reporting eating healthier over the past year |
| Daily portions of fruits and vegetables: 5+ | 3-4 portions/day | 1.96 (1.49, 2.56) | <0.001 | Women eating 3-4 portions of fruits and vegetables per day had odds of smoking almost double women eating 5+ portions per day |
| | 0-2 portions/day | 2.92 (2.16, 3.95) | <0.001 | Women eating 0-2 portions of fruits and vegetables per day had odds of smoking almost triple women eating 5+ portions per day |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| Consumption of meals cooked from scratch with fresh ingredients: often (3+ days/ week) | Regular (1-2 days/ week) | 1.18 (0.94, 1.48) | 0.165 | No statistically significant difference in odds of smoking in women regularly eating meals cooked from scratch using fresh ingredients compared to women often eating such meals |
| | Rare (<1 day/week) | 1.70 (1.29, 2.23) | <0.001 | Women rarely eating meals cooked from scratch using some fresh ingredients had odds of smoking 70% higher than men often eating such meals |
| Moderate or vigorous (30mins.) exercise: 5 times per week | < 5 times per week | 0.97 (0.76, 1.24) | 0.820 | Women taking moderate or vigorous exercise (30min. sessions) less than 5 times per week had similar odds of smoking as women doing so 5+ times per week |
| | Light exercise only | 1.26 (0.95, 1.68) | 0.115 | No significant increase in odds of smoking in women taking only light exercise compared to women taking moderate or vigorous exercise (30min. sessions) 5+ times per week |
| | Never exercise | 2.04 (1.34, 3.02) | 0.001 | Women never taking exercise had odds of smoking twice as high as women taking moderate or vigorous exercise (30min. sessions) 5+ times per week |
| Body mass index: obese (BMI 30+) | Overweight (BMI 25-29) | 1.41 (1.04, 1.91) | 0.027 | Overweight women had odds of smoking 41% higher than obese women |
| | Healthy weight (BMI 20-24) | 1.53 (1.15, 2.05) | 0.004 | Women with a healthy weight had odds of smoking 53% higher than obese women |
| | Underweight (<20) | 1.79 (1.22, 2.62) | 0.003 | Underweight women had odds of smoking 79% higher than obese women |
| Feels very or fairly safe when walking alone during daytime | A bit unsafe / very unsafe / never goes | 1.87 (1.46, 2.40) | <0.001 | Women who felt unsafe while walking alone during the day, or who never went out had odds of smoking 87% higher than women who felt fairly or very safe |
| Feels very or fairly safe when walking alone during daytime | A bit unsafe | 0.93 (0.73, 1.18) | 0.546 | No statistically significant difference in odds of smoking between women who felt a bit unsafe when walking alone after dark and women who felt fairly or very safe doing so |
| | Very unsafe / never goes | 1.60 (1.25, 2.04) | <0.001 | Women who felt very unsafe while walking alone after dark, or who never went out had odds of smoking 60% higher than women who felt fairly or very safe |
| Well informed about issues affecting area | Not well informed | 1.67 (1.34, 2.07) | <0.001 | Women who felt they were not well informed about issues affecting their area had odds of smoking 67% higher than women that felt well informed |
| Involved in any local organisations over the | No involved with local organisations | 2.45 (1.53, 3.91) | <0.001 | Women who had not been involved in any local organisations over the preceding three years had odds of smoking two and a half times as high as |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| past 3 years | | | | women who had been involved in local organisations |
| Crime in local area: Minor problem | Very big problem | 3.10 (2.29, 4.19) | <0.001 | Women who felt crime in their area to be a very big problem had odds of smoking three times as high as women that felt crime to be a minor problem |
| | Fairly big problem | 1.59 (1.25, 2.01) | <0.001 | Women who felt crime in their area to be a fairly big problem had odds of smoking 59% higher than women that felt crime to be a minor problem |
| | Not a problem | 1.44 (0.95, 2.16) | 0.083 | No statistically significant difference in odds of smoking between women who felt crime in their area was not a problem and women who felt crime to be a minor problem |
| Verbal or physical threat or aggression in local area: Not a problem | Very big problem | 2.59 (1.78, 3.77) | <0.001 | Women who felt verbal or physical threat or aggression in their area to be a very big problem had odds of smoking more than double (2.6 times higher) the odds in women that felt there was no problem |
| | Fairly big problem | 1.62 (1.23, 2.14) | 0.001 | Women who felt verbal or physical threat or aggression in their area to be a fairly big problem had odds of smoking 62% higher than women that felt there was no problem |
| | Minor problem | 1.03 (0.80, 1.32) | 0.840 | Odds of smoking in women who felt verbal or physical threat or aggression in their area was only a minor big problem were similar to women that felt there was no problem |
| Graffiti or vandalism in area: Not a problem | Very big problem | 2.92 (2.02, 4.21) | <0.001 | Women who felt graffiti and vandalism was a very big problem in their area had odds of smoking almost three times as high as women who felt it was not a problem |
| | Fairly big problem | 1.91 (1.48, 2.46) | <0.001 | Women who felt graffiti and vandalism was a fairly big problem in their area had odds of smoking almost twice times as high as women who felt it was not a problem |
| | Minor problem | 1.17 (0.89, 1.53) | 0.275 | No statistically significant difference in odds of smoking between women who felt graffiti and vandalism was only a minor problem in their area and women who felt it was not a problem |
| Number of people in your neighbourhood that you trust: Most of the people | Some of the people | 1.06 (0.80, 1.40) | 0.689 | No statistically significant difference in odds of smoking between women that trusted some of the people in their neighbourhood and women that trusted most of the people |
| | A few of the people | 1.44 (1.12, 1.85) | 0.005 | Women who only trusted a few of the people in their neighbourhood had odds of smoking 44% higher than women that trusted most of the people |
| | None of the people | 1.92 (1.13, 3.25) | 0.015 | Women who trusted none of the people in their neighbourhood had odds of |

| Comparison group | Level of factor | Odds-ratio (95%CI) | p-value | In relation to comparison group… |
|---|---|---|---|---|
| | | | | smoking 92%higher than women that trusted most of the people |
| Neighbours in area look out for each other | Neighbours don't look out for each other | 1.68 (1.32, 2.13) | <0.001 | Women who felt their neighbours were not the sort to look out for each other had odds of smoking 68% higher than women that felt their neighbours did look out for each other |
| In the event of a serious crisis how many people could you turn to for comfort and support: 10 or more | 5-9 | 1.40 (1.11, 1.78) | 0.005 | Women that had 5-9 people they could turn to for comfort and support in the event of a serious crisis had odds of smoking 40% higher than women that had 10 or more people they could turn to |
| | 1-4 | 1.74 (1.36, 2.23) | <0.001 | Women that had 1-4 people they could turn to for comfort and support in the event of a serious crisis had odds of smoking 75% higher than women that had 10 or more people they could turn to |
| | None | 1.56 (0.94, 2.61) | 0.088 | No statistically significant difference in odds of smoking between women who had no-one they could turn to for comfort and support in the event of a serious crisis and women who had 10 or more people they could turn to |

After adjusting for age, there was no significant difference in the odds of smoking in women for the following factors:

- Between women that drank alcohol on most days, weekly, monthly or less
- Between women that ate ready meals often, regularly or rarely
- Between women that ate takeaway or other convenience meals often, regularly or rarely
- Between women that ate meals cooked using some fresh ingredients often, regularly or rarely
- Between women that felt they could influence decisions affecting their area and women that did not
- Between women that had taken some action in an attempt to solve a local problem and women that had not
- Between women that spoke to family members on most days, weekly, monthly or rarely
- Between women that spoke to friends on most days, weekly, monthly or rarely
- Between women that spoke to neighbours on most days, weekly, monthly or rarely
- Between women that spoke to family members, friends or neighbours on most days, weekly, monthly or rarely
- Between women that could ask someone for help if they were ill in bed and women that could not

# 4 Conclusions

Smokers tended to have worse mental and physical health, were more likely to have their daily activities restricted and were more likely to be registered as disabled, than non-smokers. Smokers were also more likely than non-smokers to exhibit a range of other unhealthy behaviours. For example, smokers were more likely than non-smokers to binge drink regularly or drink too many units of alcohol in a week, as well as eat a diet low in fruits and vegetables and were more likely to lack the knowledge to guide them to healthy eating and the percentage getting the recommended amount of exercise per week was lower in smokers than non-smokers. Only in terms body mass index did smokers do better than non-smokers, with lower percentages of smokers obese or overweight, with the exception of women who smoked 20 cigarettes per day or more, who had the highest percentage obese. Smokers appeared less aware about the positive health impact to be gained from stopping smoking, and tended to have lower levels of social capital than non-smokers, excluding social networks and actions taken to solve a local problem.

For many of these factors, former smokers were similar to smokers, perhaps indicating that the reason they stopped smoking was to help tackle some of their lifestyle problems. For most of these factors, heavy smokers performed worse than other smokers.

People living in deprived areas were more likely to smoke than those living in less deprived areas, while those with no educational qualifications were more likely to smoke than those that had some qualifications. Smoking prevalence was highest in young people (especially for men), and higher in men than women, although in the two most deprived quintiles smoking prevalence in women exceeded that in men.

While the overall prevalence of smoking had decreased since earlier surveys (using as the baseline the weighted mean of the 2003 health and lifestyle survey and the 2004 social capital survey), in women in the two most deprived quintiles smoking prevalence increased in 2007. The odds of smoking for these women were more than three times as high as for women in the least deprived quintile.

# 5 Recommendations

Despite statistically significant differences in smoking prevalence among subgroups, smoking prevalence rates are high in all groups. Therefore while particular groups could be targeted by smoking cessation services, a more general approach is needed across Hull to tackle the high smoking rates seen across Hull.

## Appendix: Statistical terms

### *Medians, quartiles and quintiles*

The median is used to represent a 'typical' value or summary measure in the same way that the average is used. The average is influenced by extra high values which may not be typical, so the average is less appropriate to use in circumstances when the distribution of the values is skewed, that is with a very small number of people having particularly high, or particularly low, values. The median is not influenced by such extremes. The median is the value for which half the group have a value below this and half of the group have a value above this.

For instance, if 50 people smoked five cigarettes per day and five people smoked 50 cigarettes per day then the average would be 9.1 cigarettes per day, but the median would be 5 cigarettes per day representing a more 'typical' value. Half the 55 people surveyed smoked five cigarettes per day or more and half the people smoked five cigarettes per day or less.

The median can be further divided giving the upper and lower quartiles with one-quarter of people within a group having a value below the lower quartile, one-quarter having a value between the lower quartile and the median, one-quarter having a value between the median and the upper quartile and the remaining quarter having a value above the upper quartile. The inter-quartile range is the difference between the upper and lower quartiles, and is a measure of the variability.

Quintiles similarly divide a group into five groups, and this has been undertaken in relation to the local deprivation quintiles, with five groups created each containing approximately 20% of the population of Hull (although the survey population was not so evenly distributed over the local quintiles for Hull's population so the percentages for the survey responders is not 20% across all deprivation quintiles).

### *Significance testing*

It is often useful to compare a particular summary measure, for instance, mean, median, measure of risk among different groups. Since there is natural variation associated with virtually all measurements and since we generally only have a sample and have not measured the entire population, it is necessary to distinguish between differences which are close enough together to be explained by chance and difference which are 'unlikely' to be explained by chance. Such a comparison can be undertaken using a statistical test which takes into the account chance variation. When undertaking a statistical test, we assume that there is no difference in the summary measure among the groups, a so-called null hypothesis, and then calculate the probability of obtaining the difference we observe in our sample

(i.e. in the data we have). If the calculated probability, or so-called p-value, is small then this means that there is a small chance of obtaining such a result under this null assumption of no difference. Therefore, if the probability is small enough (generally, less than one in twenty or less than 0.05) then we assume that the original assumption must be incorrect and that there really is a difference. Since this is based on probabilities and assumptions, just because a small p-value is observed, it does not necessarily mean that the original assumption of no difference between the groups is untrue. However, clearly the smaller the p-value, the more likely it is that the original assumption is untrue. Similarly, just because you obtain a large p-value and therefore have no evidence to reject the original assumption, it does not mean that it is actually true, it could be that there is simply insufficient evidence to show otherwise (for example, a small number of people or small number of people with a particular event). If a small p-value is obtained (typically $p<0.05$) then the difference is deemed '***statistically significant***'. However, this does not necessarily mean that the result is important clinically. It is possible that 50% of those living in one area report poor health compared to 47% in another area. If the number of people involved in the survey was sufficiently large, it is possible to obtain a statistically significant difference between these areas. However, from a medical point of view it may be considered not very important and the fact that both areas report high levels of poor health may be more important. That is, there could be a statistically significant difference in a particular statistic (percentage or odds-ratio) between two different groups, but that does not necessarily mean that the difference is clinically relevant/important or clinically significant.

Due to the large number of comparisons made in this report when differences are reported as being statistically significant they are significant at the $p<0.01$ level. Choosing this level of significance has the effect of reducing the chance of statistically significant results being found by chance alone from 1 in 20 to 1 in 100.

### *Confounders*

When examining the relationship between two factors, for example, levels of exercise and deprivation, another third variable could influence the relationship indirectly if it is associated with both variables. This third variable is called a confounder, and can mask true relationships, create artificial non-existent relationships or distort a relationship. With a confounder present, the association could observed between the two factors observed (e.g. smoking and the factor of interest) indirectly through *their* association with age, and there could be no real true association between smoking and the factor of interest.

Age and gender are confounders in relation to smoking for many associations, as many of the other factors which we would like to examine in relation to smoking are also associated with age and gender. For example, in the survey responders, health status and exercise levels are both associated with age. Younger people are more likely to smoke. However, as young people tend to

be healthier and exercise more frequently, there could be an association between smoking and health and between smoking and exercise. However, such a relationship could exist in its own right, or it could be artificial through the link through age, i.e. that age is a confounding factor.

One solution is to age standardise the levels of smoking, for example, by calculating the age standardised percentage who smoke.

### *Standardisation*

The prevalence of ill-health, risk factors, disease and mortality within a particular population will depend on the age and gender structure of that population (as well as many other factors such as deprivation).

In terms of the provision of resources, it is best to report on the prevalence without taking into account the age and gender distribution of the population. This is because it is necessary to treat and have the provision to treat the existing population, regardless of the age and gender structure. However, if one wishes to assess whether one population has an excess rate of disease or if there is a difference in the prevalence of exercise levels among different groups of people living in areas of differing levels of deprivation, it is necessary to take any differences in the age and gender structure (and potentially other factors too) into consideration. Otherwise any differences found may be simply due to differences in the age and gender structure of the different populations, and not due to the factor of interest, e.g. deprivation. The age and gender structure can be taken into consideration by using standardisation. Generally, standardised rates are age-standardised or age-gender-standardised, but rates can also be standardised to other factors, for example, deprivation-standardised rates.

Direct standardisation has been used in this report, which involves applying the percentages of the factor of interest observed in the study group of people to a 'standard' population. The percentages of the factor of interest are calculated for each gender and age group, and applied to the standard population. The standard population can be an English population, the European Standard Population or a local population for a specific time period. For the purposes of this report the Hull 2007 population was used as the standard population.

### *Odds ratio*

The odds-ratio is used as a measure of risk (it is not the same as but similar to another commonly used measure of risk, the relative risk). The odds of people being smokers are the ratio of the number of people who are smokers to the number of people who are not smokers. The odds-ratio is obtained from the odds of being a smoker in one group, for example, people living in the most deprived local quintile, divided by the odds of being a smoker in another comparison group, for example, people living in the next most

deprived local quintile. It is used to compare the odds (or risk) of smoking in one group relative to a reference group. An odds-ratio of more than one means that there is increased odds (or risk) of being a smoker in the group compared to the reference group, and an odds-ratio less than one means that the odds (or risk) of being a smoker in the group is less than the reference group.

### *Confidence interval*

Since we only have a sample and have not examined data from the entire population[15] (e.g. all residents in the PCT at a particular time point), we only have an estimate of the particular characteristic we wish to measure, for example, the percentage of men aged 18-24 years who smoke. The 95% confidence interval (CI) gives a range of values for which we are 95% confident that the interval will contain the true, underlying statistic (e.g. percentage or mean or difference between two means) of the entire population. Having a range of values for which the population statistic lies is much more useful than having a single value. The interval also takes into consideration the number of people for which the estimate is based, so that if there are many people surveyed the interval tends to be narrower (and therefore more useful). Confidence intervals can be produced for odds-ratios resulting from logistic regression models. This then gives a better indication of the range of the odds (or risk) for a particular factor. For example, if the odds-ratio was 1.8 for smoking for those that drink alcohol relative to those that never drink alcohol, and the 95% confidence interval ranged from 1.4 to 2.2 then we would be 95% confident that the true underlying odds-ratio within the population was somewhere between 1.4 and 2.2, that is, that the odds of being a smoker were at least 40% higher in those that drink alcohol than those that never drink alcohol could be as 120% higher. The 95% confidence interval for a difference between two groups will have a p-value less than 0.05[16] if the interval does not include the "no difference" value (which is zero for differences in percentages or means and one for ratios, such as the odds ratio).

### *Boxplots*

Boxplots are figures which illustrate the distribution of numerical variables. In this document, they will be used to illustrate the distribution of a single variable across different groups, e.g. health measures by smoking status. Boxplots are generally used when the mean might not represent a 'typical'

[15] In some public health cases, we do have data from the entire population, e.g. information on all deaths which occurred in Hull for a particular year. However, such deaths for that particular year, are still subject to inherent variability and it would be this variation that is been assessed.

[16] In rare cases this is not the case depending on the way in which the statistical test is undertaken and the assumptions made, however, if it is not true then the p-value will be close to 0.05.

value such as when there are a small number of individuals who have unusually low or high values. They display the median, and upper and lower quartiles. The solid line across the box represents the median ('middle') value, where half of responders report a value higher than this and half report a value less than this. The bottom and the top of the box represent the lower and upper quartile respectively, which further divide the individuals into four groups. One-quarter of individuals have a value the same or less than the lower quartile; one-quarter have a value between the lower quartile and the median, one-quarter have a value between the median and the upper quartile and the final one-quarter have a value equal to or higher than the upper quarter. The general range of values is given by the lines from the bottom and the top of the box (outliers and extreme values are denoted by circles and asterisks).

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