



Cancer Prevention

Stacking the odds in your favour

A report by Cancer Research UK

Funded by ScottishPower

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CEO, Cancer Research UK

More than one in three of us will develop cancer during our lifetime. The most recent figures show that over 309,000 people are diagnosed with cancer each year in the UK. But despite this there are plenty of things we can do to cut our risk of developing cancer. Cancer isn't just down to the genes we are born with or bad luck. The risk of developing the disease depends on a combination of factors: our genes, the environment and certain aspects of our lives.

In the biggest review of lifestyle and cancer to date, Cancer Research UK found that more than 4 in 10 cancers could be prevented by lifestyle changes. This means that lifestyle choices can stack the odds against getting cancer in our favour. Not smoking, keeping a healthy weight, cutting down on alcohol, eating healthily, being physically active, and enjoying the sun safely can all have an impact on cancer risk.

Smoking is by far the most important preventable cause of cancer and is linked to at least 14 different types of the disease. Alcohol also increases cancer risk, and the combination of both smoking and drinking heavily increases the risk considerably more. Alcohol increases the risk of seven different types of cancer. All alcoholic drinks – beer, wine, spirits – raise the chances of developing the disease. Limiting alcohol to one small drink (2–3 units) a day for women or two small drinks (3–4 units) a day for men can significantly reduce the risk of developing cancer. The more you cut down on alcohol, the more you reduce the risk.

After smoking, excess weight is one of the biggest causes of cancer. Research shows that many types of cancer are more common in people who are overweight or obese, such as two of the most common types – bowel and breast – and one of the hardest to treat – pancreatic cancer. Around 17,000 cases of cancer each year in the UK are linked to being overweight or obese. But with the UK's growing waistline, this is likely to go up in future. In 2009, nearly two thirds of adults were overweight or obese in England, and of these nearly a quarter were obese. Put simply, excess weight is caused by people taking in more energy (calories) through food and drink than they use up through physical activity. And experts predict that if no action is taken to tackle the UK's excess weight, 60 percent of men and 50 percent of women would be obese by 2050.

The problem

Overall, experts estimate that nearly 1 in 10 cancers in the UK may be due to unhealthy diets. But because our diets consist of so many different foods and nutrients, the link between diet and cancer risk is more difficult to unravel than other lifestyle factors. In terms of the food we eat, getting our five-a-day has the biggest impact – around five percent of cancers in the UK may be linked to eating fewer than five portions (400g) a day of fruit and vegetables. Fruits and vegetables are an excellent source of various vitamins, minerals and fibre, which are all important for our health. Eating a high-fibre diet can reduce the risk of bowel cancer, and a high intake of red and processed meat is linked to a higher risk of the disease. Red meat includes any fresh, minced or frozen beef, pork, lamb or veal. And processed meat is anything that's been preserved (apart from by freezing) such as salami, bacon, ham and sausages. Research has typically found that processed meat has a stronger effect on bowel cancer risk than red meat.

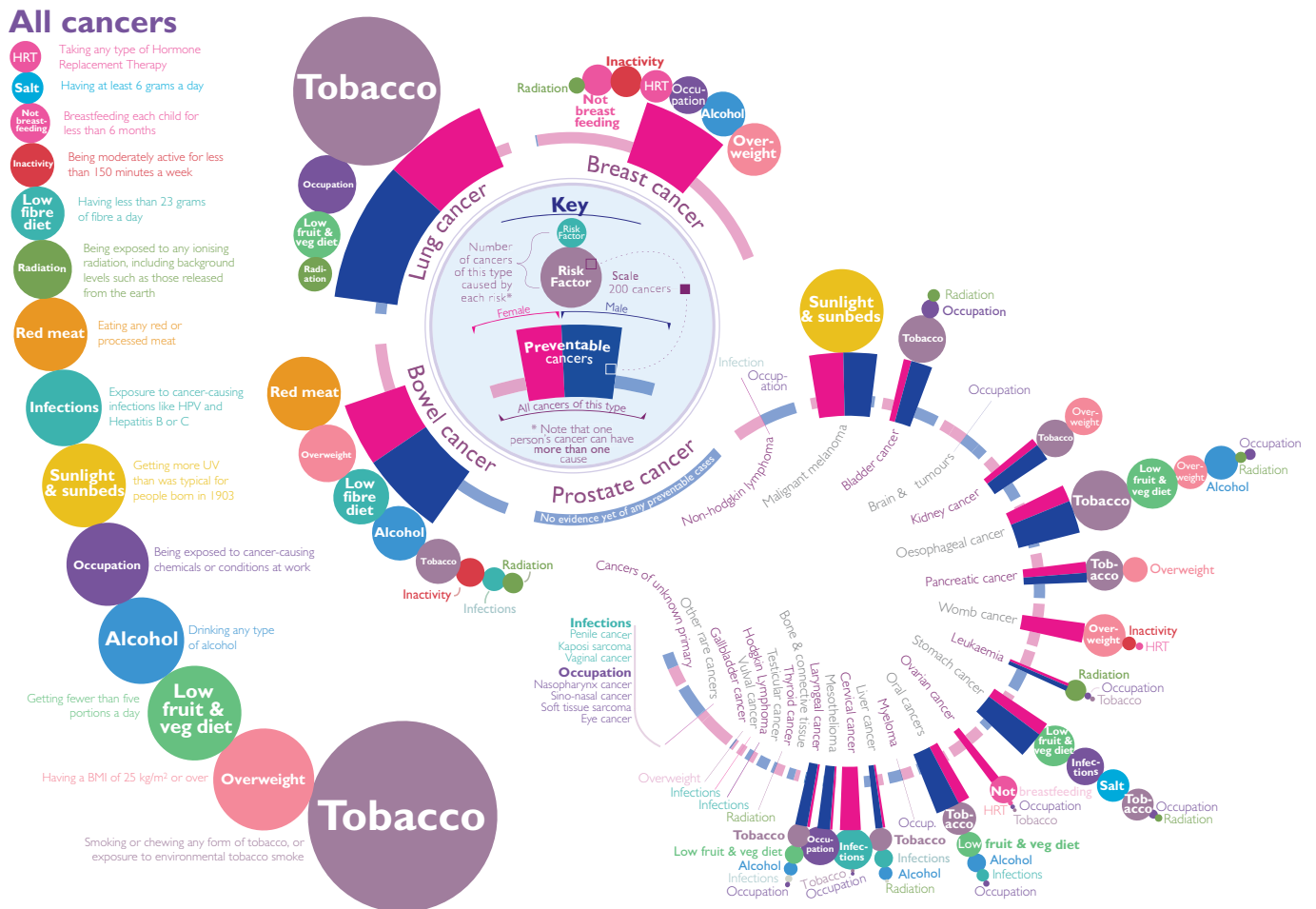
Research shows that people who are physically active have a lower risk of cancer than those who are not. Both the food we eat and how active we are independently affect this risk. Staying physically active can have a protective effect against cancers of the bowel, breast and womb.

Over-exposure to ultraviolet (UV) radiation from the sun or sunbeds is the main cause of malignant melanoma – the most serious form of skin cancer – and rates of this are rising faster than any other common cancer. It's important to enjoy the sun safely, and to take care not to burn by using a combination of shade, clothing and at least SPF 15 sunscreen to protect our skin from strong sun.

There are many aspects of our lives that can affect the risk of cancer. Sticking to a healthy lifestyle is not a cast-iron guarantee against the disease, but it can significantly stack the odds of avoiding cancer in our favour.

How many cancers can be prevented?

A landmark study published in the *British Journal of Cancer*, November 2011, showed that 45 percent of all cancers in men and 40 percent of all cancers in women could be prevented.



Although there are some things we can't control about our cancer risk, decades of research have clearly shown that by living a healthy life, people can reduce the risk of developing the disease. But how many cancers in the UK are really caused by things we can change?

This diagram shows the results of new research funded by Cancer Research UK, which aims to show the number of cancer cases in the UK that could be prevented by known lifestyle and environmental factors, like being a non-smoker, keeping a healthy weight, drinking less alcohol, eating a healthy, balanced diet, and avoiding being exposed to certain infections or radiation.

The thin lines show the total number of cancers of each type from the latest UK incidence figures, and the large bars in the centre of each line show the proportion of these cases that could be prevented in men and women. Around the outside, you'll see the lifestyle and environmental factors that are linked to each cancer type. On the left is the contribution of each lifestyle factor to cancer overall.

Key results

In March 2012 a YouGov survey asked 2011 people questions about their health behaviours and barriers to changing their lifestyles. The table below shows the characteristics of the sample – sex, age, marital status, occupation, chosen newspaper and social grade.

Demographic	Percent (number)
Gender	
Male	48 (965)
Female	52 (1046)
Age	
18–24	12 (241)
25–34	17.8 (359)
35–44	16.4 (331)
45–54	18.7 (376)
55 and over	35 (704)
Marital status	
Married/Civil Partnership	50.2 (1010)
Not married	49.8 (1001)
Occupation	
Working (full/part time)	63 (1268)
Student	5.5 (110)
Retired	20.4 (410)
Unemployed/not working	11 (224)
Newspaper	
Express / Mail	16 (322)
Sun / Star	22 (442)
Mirror / Record	16 (322)
Guardian / Independent	4 (80)
FT / Times / Telegraph	9.5 (191)
Other Paper	12.5 (251)
Social grade	
ABCI (Less deprived)	55 (1106)
C2DE (More deprived)	45 (905)

Body weight

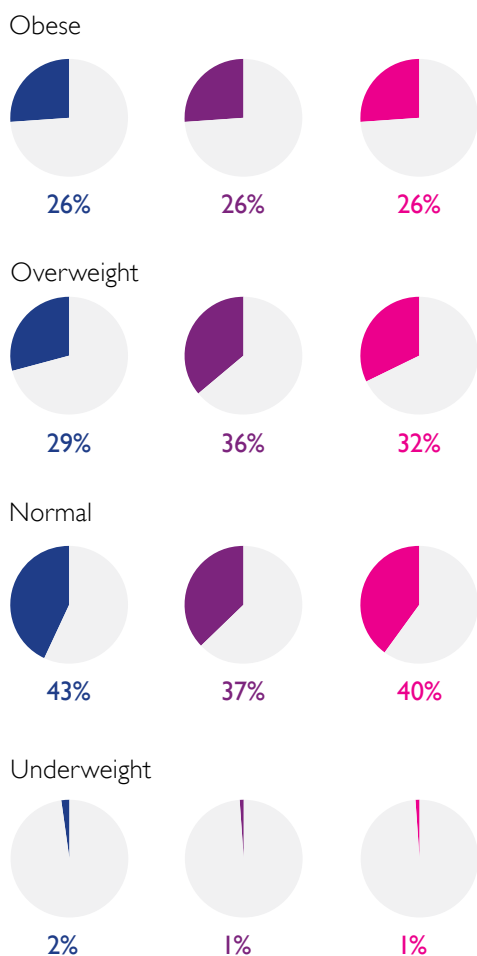
Respondents were asked to give their height and weight so that their Body Mass Index (BMI) could be calculated.

Body Mass Index is calculated by dividing weight (in kilograms) by the square of your height (metres). It is a good guide to see if people are a healthy weight for their height.

- under 18.5 is underweight
- 18.5–25 is healthy weight
- 25–30 is overweight
- Over 30 is obese

In this sample of 2011 people, 26 percent had a BMI of 30 or over so are either classified as obese or morbidly obese. This percentage was the same when splitting the sample by gender. A further 32 percent of respondents had a BMI between 25 and 30 and so are classified as 'overweight'. There were slightly more men (36 percent) than women (29 percent) in this category. This difference is significant. Figure 1 shows the breakdown of respondents by BMI.

Figure 1. BMI classification of all respondents



Female
Male
Total

When asked: Do you want to lose weight?

More than two thirds (69 percent) of the sample reported wanting to lose weight and 87 percent of the overweight or obese respondents said that they want to decrease their weight. Women in the overweight or obese categories showed a significantly greater interest in losing weight than the men, with 94 percent claiming they wanted to lose weight compared to 80 percent of men. Social status wasn't a factor in the desire to lose weight.

When asked: 'To what extent do you agree or disagree that each of the following can increase a person's chances of developing cancer?' there was a high knowledge of the link between body weight and cancer with nearly two thirds (63 percent) of all respondents agreeing that 'being overweight' was a risk factor. This percentage was the same for both male and female respondents and was slightly higher for obese or overweight respondents (66 percent). There was no significant difference by deprivation level in percentage agreeing that being overweight was a risk factor for cancer.

Respondents who said they wanted to lose weight were asked: 'Which, if any, of the following make it difficult for you to lose weight?' and were shown a list of seven potential barriers (see figure 2). The biggest barrier for overweight or obese respondents who wanted to lose weight was 'lack of willpower' (64 percent) followed by 'I've tried it before and I wasn't successful' (46 percent) and 'I have too many other things to worry about' (43 percent).

Figure 2: Barriers to losing weight for overweight or obese respondents (N = 997)

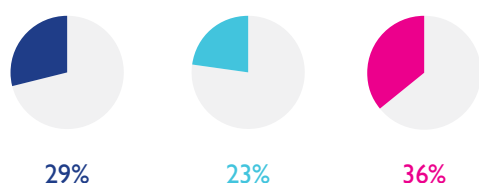


Red and processed meat

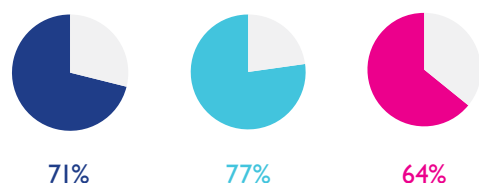
When asked: 'Approximately how many servings of red or processed meat would you say you usually eat?' 29 percent of respondents reported eating one or more serving of red and processed meat per day. Male respondents eat significantly more red and processed meat than females, with 36 percent of men reporting that they eat one or more servings a day compared to only 23 percent of women (see figure 3).

Figure 3. Red and processed meat consumption of respondents

One or more serving of red and processed meat per day



Less than one serving of red and processed meat per day



■ All respondents
■ Female
■ Male

There appeared to be a low desire to cut down on red and processed meat with only 17 percent of respondents reporting that they wanted to decrease the amount they eat. Despite male respondents eating more red and processed meat than females, more female than male respondents wanted to reduce their consumption (18 percent females, 15 percent males). Fewer than a fifth (19 percent) of respondents who reported eating one or more servings of red and processed meat per day said they wanted to reduce their intake.

Knowledge of cancer risk from eating a lot of red and processed meat:

Over half (54 percent) of the 2011 people surveyed agreed that 'eating a lot of red and processed meat' was a risk factor for cancer. This indicated that many respondents either do not know that they are eating over the recommended amount of red and processed meat or they are unwilling to reduce their consumption. There were no significant differences between genders or levels of deprivation in percentage terms agreeing that eating a lot of red and processed meat was a cancer risk factor.

In those that reported eating one or more servings per day 46 percent agreed that 'eating a lot of red and processed meat' was a risk factor for cancer. Of those who reported eating one or more serving per day and strongly agreed or agreed that red and processed meat is a risk factor, 32 percent wanted to reduce the amount of red and processed meat they eat. This falls to only 9 percent (significantly less) in those that reported eating one or more servings per day and strongly disagreed, disagreed, or neither agreed or disagreed.

Respondents who reported wanting to reduce the amount of red and processed meat they eat were shown a list of seven potential barriers and asked: 'Which, if any, of the following make it difficult for you to decrease the amount of red or processed meat that you eat?'. The three biggest barriers for respondents who eat one or more serving of red and processed meat a day were: 'I like the taste' (85 percent), 'it's convenient' (81 percent) and 'it is easy to cook' (73 percent). See figure 4.

Figure 4. Barriers to reducing intake of red and processed meat for respondents eating one or more serving per day (N = 113)

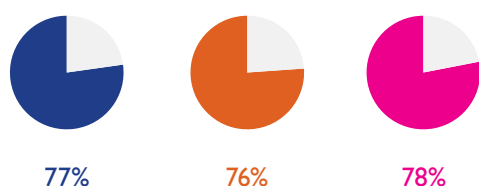


Exercise/Physical activity

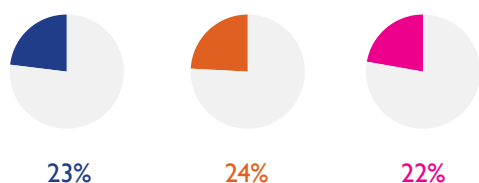
When asked: 'During a typical 7 day period, on average how long, if at all, do you do moderate to vigorous exercise during your free time?' only 23 percent of the sample do the recommended amount of at least 2 hours 30 minutes of moderate physical activity a week. This figure was similar between genders with 24 percent of females doing the recommended amount of exercise compared to 22 percent of males (see figure 5).

Figure 5. Exercise levels of respondents

Doing less than the recommended amount of exercise



Doing the recommended amount of exercise



- All respondents
- Female
- Male

Over two thirds of respondents (69 percent) said that they would like to increase the amount of exercise they do. However, less than a half (46 percent) agreed that not doing much physical activity was a cancer risk factor.

'I wish I'd known that being overweight meant I was more likely to get cancer'

Knowledge of cancer risk:

There were significant differences between genders and deprivation levels in their desire to exercise more and their knowledge of the link between exercise and cancer. More female respondents wanted to increase their exercise levels than males (74 percent females, 64 percent males) and half of female respondents agreed that a lack of physical activity was a cancer risk factor compared to only 42 percent of the male sample. More affluent people showed a greater desire to increase their exercise levels than less affluent respondents (71 percent more affluent, 66 percent less affluent). The less deprived respondents had a better knowledge of the link between cancer and exercise with 51 percent agreeing that not doing much physical activity was a risk factor compared to only 40 percent of the more deprived sample.

Respondents who want to increase their exercise levels were asked to select which of 10 potential barriers make it difficult to increase their exercise. The barrier most selected by respondents who do less than the recommended amount of exercise was 'joining a gym or going to a fitness class is too expensive' (72 percent), followed by 'it's not a habit' (66 percent) and 'I'm too busy' (61 percent). See figure 6.

Figure 6. Barriers to increasing exercise for respondents not doing the recommended amount of physical activity (N = 445)

Joining a gym or going to a fitness class is too expensive



It's not a habit



I'm too busy



I lack willpower



I don't feel fit enough



I have too many other things to worry about



It's too much effort



I don't enjoy it



It's boring



I've tried it before and I wasn't successful

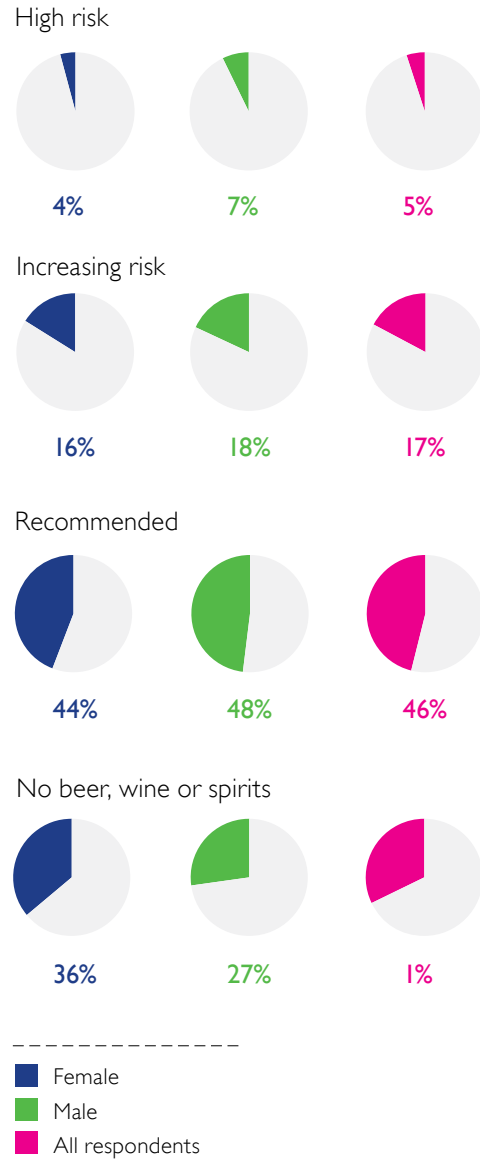


Alcohol

Respondents were asked: 'Thinking about an average week, approximately how much wine, beer and alcoholic spirits do you drink?' to give an indication of their alcohol intake. Average alcohol intake was worked out in units (see appendix 1 for unit breakdown), and respondents were categorised into four groups. Nearly a third (32 percent) of the sample reported not drinking any wine, beer or spirits. A larger number of female respondents were in this group with 36 percent of women reporting that they do not drink beer, wine or spirits compared to 27 percent of males. It cannot be assumed that this group do not drink any alcohol at all as for the survey didn't ask about consumption of alcoholic drinks such as alcopops and cider.

Just under a half (46 percent) of the sample reported drinking less than the maximum recommended amount of 14 units for women and 21 units for men. This figure was similar for both men and women (48 percent males, 44 percent females). The other 22 percent of respondents were either in the 'increasing risk' category (drinking between 14 and 35 units for women and between 21 and 50 units for men) or 'high risk' category (drinking over 35 units for women and 50 units for men). There was a slightly higher proportion of males in these groups than females. (see figure 7).

Figure 7. Alcohol intake for all respondents



Alcohol

Asking the sample whether they wanted to reduce the amount of alcohol they drank showed that of those applicable (i.e. people who drink alcohol), only 17 percent said that they want to reduce their alcohol intake. This percentage was similar when splitting respondents by gender with 17 percent of male drinkers reporting they want to reduce their alcohol intake compared to 18 percent of women. 38 percent of the respondents who drink more than the maximum recommended amount said they wanted to reduce their alcohol intake.

Deprivation levels appeared to impact desire to reduce alcohol intake. 42 percent of the less deprived individuals who drank more than the maximum recommended amount wanted to reduce their alcohol intake compared to only a third of more deprived respondents.

‘It’s so important to be aware that your lifestyle can have such an impact on your chances of developing cancer’

Knowledge of cancer risk:

When asked: ‘To what extent do you agree or disagree that each of the following can increase a person’s chances of developing cancer?’ just over a half (52 percent) of the total sample agreed that drinking any alcohol was a risk factor for cancer. Significantly more female respondents agreed that drinking any alcohol was a risk factor than the male sample (56 percent females, 48 percent males).

Of the ten options given, the most selected barrier which makes it difficult to reduce alcohol intake was ‘it helps me relax and unwind’ (85 percent). The second biggest barrier was ‘it’s a habit’ (65 percent) and the least selected barrier was ‘I would feel too embarrassed to drink less or be a ‘non-drinker’ (6 percent). See figure 8.

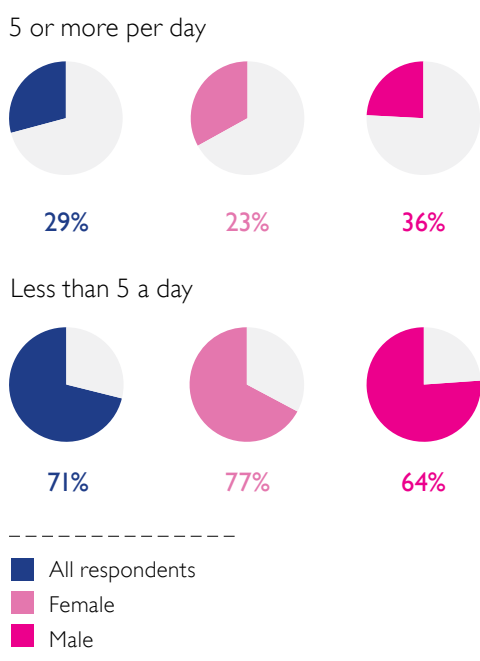
Figure 8. Barriers to decreasing alcohol intake for respondents who want to reduce (N = 261)



Fruit and Vegetables

Asking the 2011 people in the sample: 'approximately how many servings of fruit and vegetables would you say you usually eat?' showed that less than a third (29 percent) eat the recommended number of five fruit and vegetables per day. Data also showed that more female respondents eat the recommended amount of fruit and vegetables (33 percent) than the male respondents (24 percent). See figure 9.

Figure 9. Percentage of respondents eating more or less than five servings of fruit and vegetables per day



When asked: 'Do you want to increase the amount of fruit and/or vegetables that you eat?' over two thirds (68 percent) said that they wanted to. Of the sample who eat fewer than five fruit and vegetables per day, there were no significant differences between genders of deprivation levels.

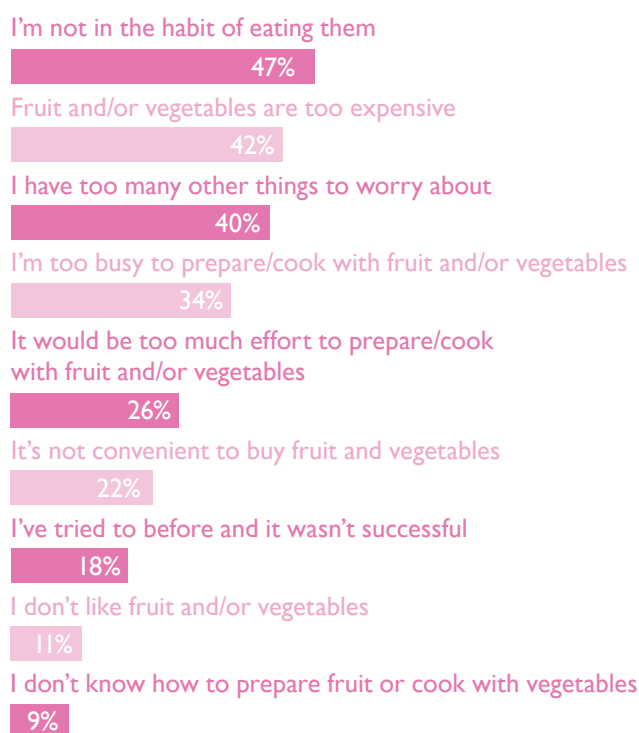
Knowledge of cancer risk:

Just under half (44 percent) of all respondents agreed that eating few fruits or vegetables could increase a person's chances of developing cancer. Forty eight percent of women agreed that eating few fruits or vegetables could increase a person's risk, significantly more than the percentage of men (40 percent). Of those who eat fewer than five servings of fruit and vegetables a day, slightly more female respondents agreed that eating few fruits and vegetables is a cancer risk factor than male respondents (43 percent females, 38 percent males) and fewer more deprived respondents agreed than less deprived (46 percent less deprived and 34 percent more deprived).



The biggest barrier to eating more fruit and vegetables for respondents who eat fewer than five servings a day and want to increase was 'I'm not in the habit of eating them' (47 percent), followed by 'fruit and/or vegetables are too expensive' (42 percent) and 'I have too many other things to worry about' (40 percent). See figure 10.

Figure 10. Barriers to increasing fruit and vegetable intake for respondents not eating the recommended amount (N = 1053)



Risk factors

Respondents were also asked: 'to what extent do you agree or disagree that each of the following can increase a person's chances of developing cancer'. For 'smoking' and 'overexposure to ultraviolet radiation (UV) from the sun', there was a high level of knowledge about both of the factors. 91 percent of respondents agreeing that smoking was a cancer risk factor and 87 percent agreeing that overexposure to UV from the sun was a risk factor for cancer.

Risk Factor	Percent Agree or Strongly Agree	Male	Female	ABCI	C2DE
Smoking	91%	NS	NS	NS	NS
Drinking any alcohol	52%	48%	56%	NS	NS
Eating few fruits or vegetables	44%	40%	48%	50%	37%
Eating a lot of red or processed meat	54%	NS	NS	NS	NS
Being overweight	64%	NS	NS	66%	62%
Not doing much physical activity	46%	42%	50%	51%	40%
Overexposure to ultraviolet radiation (UV) from the sun	87%	85%	89%	NS	NS

NS – Not significantly different from the overall figure.

Appendix I:

Figure 11. Breakdown of alcohol units

Amount of alcohol	Small glass (125ml)	Standard glass (175ml)	Large glass (250ml)	Bottle (330ml)	Half a pint (254ml)	Pint (568ml)	Can (440ml)	One measure (25ml)	Large measure (35ml)	Double measure (50 ml)
Units	1.5 units	2 units	3 units	1 unit	1 unit	2 units	2 units	1 unit	1.4 units	2 units

Lifestyle changes make the world of difference

Jackie Gledhill, a 59 year old mother-of-two from Surrey, was diagnosed with thyroid cancer in 2001 and had surgery followed by radioactive iodine treatment. Once she finished her treatment, Jackie joined a gym and as part of a weight loss programme, lost five stones in 18 months. She is now very keen on fitness and enjoys running, cycling and completing challenges, including the London to Brighton cycle in 2011.

“It’s so important to know that your lifestyle can have such an impact on your chances of developing cancer,” she said. “There is so much we can do to cut down our risk and losing weight or giving up smoking are such positive things for people to do. I really enjoy my exercise now and I love keeping fit and healthy. I feel so much better and it has really improved my quality of life too.”



Dr Susan Jebb, head of diet and population health at the Medical Research Council, said: “It’s encouraging that most people recognise a poor diet and lack of physical activity significantly increase their risk of developing cancer. But it’s also clear that most people find it hard to turn their good intentions – to eat better and move more – into sustained changes in their lifestyle. This gap between knowledge and behaviour helps to explain why the number of people who are obese is continuing to increase.

“Research shows that to make sustained changes in diet and physical activity people need tangible support from family, friends or health professionals. In the longer term, it’s important that the places we live and work make the healthier choice the easier choice, so healthy living becomes a way of life, not a matter of personal willpower.”

Professor Jane Wardle, from Cancer Research UK’s Health Behaviour Research Centre based at University College London, said: “The report shows that even though overweight people would like to lose weight and are aware of the cancer risk – they feel ‘lack of willpower’ is a major barrier to shedding the pounds. We know that the modern day environment makes it very hard for people to lose weight especially when they are bombarded by advertising and easily tempted by cheap readymade meals and fast food instead of a balanced diet with plenty of fresh fruit and vegetables.”

Many people believe cancer is down to fate or 'in the genes' and that it is the luck of the draw whether they get it. But there is clear evidence that around 40 percent of all cancers are caused by things people mostly have the power to change. While leading a healthy life doesn't guarantee that a person won't get cancer, healthy habits can stack the odds in their favour. And this is why it's crucial that people are aware of the risks of getting the disease in the first place, so they can make the healthiest possible lifestyle choices.

Stopping smoking, eating a balanced diet, cutting down on alcohol and maintaining a healthy weight really could help save more lives in future.

Together we have the energy to help beat cancer

Cancer Research UK operates in England, Wales, Scotland and Northern Ireland.
Cancer Research UK is a registered charity in England and Wales (1089464) and in Scotland (SC041666).