

The missing link between alcohol and obesity

How passing a 'tipping point' can impact on weight



A report by

Slimming
WORLD

know you're amazing

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1 Executive summary

Introduction

Obesity and excessive alcohol consumption are recognised as among the lifestyle factors having the greatest impact on public health in the UK today. Figures show that the UK does not compare favourably with other European nations on either of these public health issues.

Data from the Association for Public Health Observatories showed that the UK has the highest prevalence of obesity in Europe¹. Furthermore, figures from the European Commission indicate that the UK also has among the highest proportion of 'binge drinkers' in Europe², while the Organisation for Economic Co-operation and Development has found that the UK's total consumption of alcohol is rising, even as other countries reduce their consumption levels³.

These combined issues are placing a huge strain on the NHS, with the cost of treating conditions associated with obesity estimated at £5.1 billion⁴ and treatment costs associated with alcohol estimated at £3.5 billion⁵. The costs to the wider economy are even greater.

The Government has stated its commitment to reducing obesity and raising awareness of the dangers of excessive drinking and in particular 'binge drinking'^{*}. However, Slimming World believes that more must be done to raise awareness among the general population of the link between the two and the impact that drinking alcohol has on our eating and activity behaviour.

To support this call for a change to the way in which these two currently separate public health campaigns are being delivered, Slimming World has conducted a review of public health policy in relation to obesity and alcohol; undertaken a literature review on the impact of alcohol on weight; commissioned a YouGov survey of 2,042 people to determine a person's 'tipping point' with alcohol (i.e. after how many units they start to make unhealthy lifestyle choices) and conducted a survey of 2,616 Slimming World members (people who struggle with their weight and are trying to make healthy lifestyle changes) to determine their views on the issue.

“ The Government has stated its commitment to reducing obesity and to raising awareness of the dangers of excessive drinking and in particular 'binge drinking'. However, Slimming World believes that more must be done to raise awareness among the general population of the link between the two. ”

The links between alcohol and obesity

Research has shown that:

- Alcohol provides 7 calories per gram. Therefore, alcohol consumption within government guidelines of 2-3 units per day for women and 3-4 units per day for men can provide up to 2,880 calories a week for women and up to 3,840 calories a week for men choosing the highest calorie option (see p11)
- Alcohol consumption can lead to an increase in food intake as it stimulates the appetite and lowers inhibitions around food
- The relationship between alcohol consumption and body weight is complex and depends on factors such as volume and frequency of consumption
- Heavy, but less frequent drinkers or 'binge drinkers' seem to be at a greater risk of obesity than low-to-moderate, frequent drinkers
- Higher alcohol intake is associated with greater central obesity (carrying excess fat around the stomach), particularly in men, which increases the risk of diabetes and other health conditions such as hypertension and heart disease
- Alcohol reduces the quality and quantity of sleep which may increase the risk of obesity.



The importance of the tipping point**

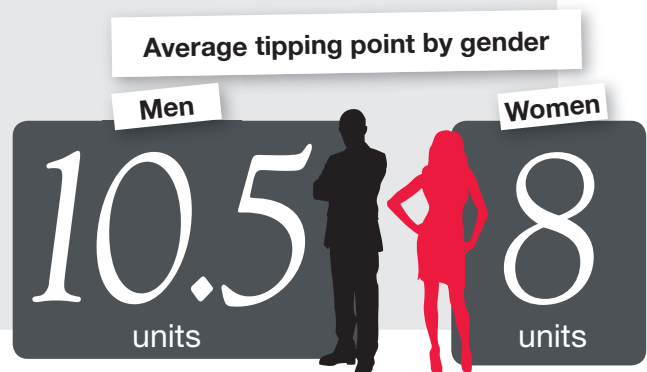
Our YouGov survey of 2,042 members of the UK population uncovered the following key findings:

- Around half (47%) of alcohol consumers drink all their alcohol across 1-2 days, rather than spreading it evenly through the week. Levels reported suggest a 'binge drinking' culture
- The average tipping point – the point at which people go on to make unhealthy choices with food and alcohol – is 9.3 units of alcohol. This is equivalent to only 3.7 pints of beer or 3.1 large glasses of wine. Fifty-one per cent of alcohol consumers acknowledge a tipping point with alcohol
- The average additional energy intake after a person has passed their tipping point is an estimated 4,305 additional calories that same evening in alcohol and food – more than twice the recommended daily calorie guideline for an adult woman
- More than half of people (58%) who acknowledge a tipping point report that they pass this point at least once on an average weekend
- The day after passing their tipping point, 50% cancel planned physical activity, which is often replaced with sedentary activity such as watching TV or staying in bed
- People continue to make unhealthy food choices the day after passing their tipping point, with an average estimated additional intake of 2,051 calories – taking the estimated total additional calorie intake to over 6,000 in two days
- People are more likely to have poor quality sleep after passing their tipping point which can lead to further unhealthy lifestyle choices
- With a 1lb weight gain said to be the equivalent of 3,500 calories^{7, 8}, the reported additional energy intake and decreased energy expenditure could mean that passing the tipping point could lead to a potential weight gain of 2lbs. (While this sort of estimate doesn't allow for differences in individuals, and weight loss or gain is often a combination of fat, lean tissue and water, it is a good rule of thumb when looking at population data).

Key recommendations

Recommendation 1: Slimming World calls on Government and health authorities to improve the links between public health campaigns on obesity and alcohol by raising awareness of how drinking too much alcohol can impact on weight-affecting lifestyle behaviours.

- Current public health campaigns on alcohol make only a small mention of how the calories contained in alcohol can impact on weight and no mention at all of how drinking too much alcohol can impact on weight-affecting lifestyle behaviours, such as food consumption, physical activity levels and sleep quality
- Our survey shows that passing the tipping point can have a significant effect on people's food choices that day, their physical activity plans and eating patterns the following day, and their quality of sleep – all of which can impact on weight
- The average tipping point is 9.3 units – 10.5 units for men and 8 units for women. This is equivalent to around 4 pints of beer for a man or 2-3 large glasses of wine for a woman
- This tipping point is similar to levels given in definitions of binge drinking (see 'definitions'), suggesting that binge drinkers are more likely to pass their tipping point. People drinking within the daily guidelines recommended by the NHS of 3-4 units for men and 2-3 units for women are less likely to pass their tipping point
- By educating the public on how excessive drinking can affect our weight by encouraging unhealthy lifestyle behaviours, public health campaigns can give people the information they need to make informed choices.



Recommendation 2: Slimming World calls on the Government to raise awareness of the calories contained in alcohol by supporting clear labelling on alcoholic drinks.

- Calorie information is not readily available for alcohol consumers when drinking. Evidence shows that in reality people rarely seek out this information on websites⁶
- Our survey found that most people underestimate the number of calories in alcohol. Furthermore, with the majority of people not using a measure when pouring alcohol at home, it's likely that many are underestimating how much they consume too
- Research shows that displaying calorie information on food menus and products can have a positive impact on healthy choices⁹⁻¹²
- Most non-alcoholic food and drink products must display calorie information on the labels yet the European Commission has ruled that alcohol is exempt. This leaves responsibility with the Government to increase pressure on the industry to introduce this more widely
- Research among 2,616 Slimming World members (people actively making healthier choices) found that 86% believe adding a calorie count to alcohol labels would be successful in helping raise awareness of the link between alcohol consumption and obesity.

86% BELIEVE

adding a calorie count to alcohol labels would be successful in helping raise awareness of the link between alcohol consumption and obesity

Definitions

* Binge drinking – There are a number of definitions of binge drinking:

- The NHS defines binge drinking as 'drinking lots of alcohol in a short space of time or drinking to get drunk'¹³
- The Department of Health uses a binge drinking definition of 8 or more units in a single session for men and 6 or more units in a single session for women¹⁴
- The Royal College of Physicians says that 10 or more units for men and 7 or more units for women in a single session is binge drinking¹⁵
- The European Commission defines binge drinking as five or more drinks in a single session².

** Tipping point – the 'tipping point' is defined by Slimming World as the number of units of alcohol after which a person typically starts to make unhealthy choices with food and drinking more alcohol than planned.

2

Obesity as a public health issue

With obesity said to reduce life expectancy by between three and 10 years¹⁶, it is quite rightly recognised as a major public health issue in the UK.

An adult is considered 'obese' when they have a Body Mass Index (BMI) of 30kg/m² or more. Having a BMI in this range increases the risk of developing many health conditions including heart disease, diabetes, stroke and cancer and can also damage quality of life and affect mental wellbeing, even causing depression¹⁷. People who carry extra weight around the middle are at particularly high risk of developing certain health problems¹⁸.

The UK is regularly said to have the highest proportion of obese inhabitants in Europe. In 2010, the Association for Public Health Observatories reported that the UK recorded the highest levels of obesity in Europe, with some regions having double the proportion of obese residents as the European average¹. In 2013, the Health and Social Care Information Centre¹⁹ stated that 23.6% of men and 25.9% of women in the UK have an obese BMI.

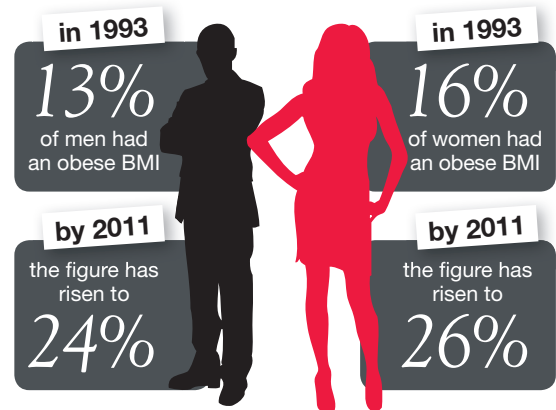
Weight category	BMI	% men in UK population	% women in UK population
Underweight	Under 18.5kg/m ²	1%	2%
Healthy weight	18.5-25kg/m ²	34%	39%
Overweight	25-30kg/m ²	41%	33%
Obese	More than 30kg/m ²	24%	26%

“ The UK has recorded the highest levels of obesity in Europe, with some regions having double the proportion of obese residents as the European average. ”

Figures show that obesity rates in the UK have continued to rise. A 2013 report by the Health and Social Care Information Centre¹⁹ revealed that the proportion of men who have an obese BMI in the UK has risen from 13% in 1993 to 24% in 2011 while, in the same period, the proportion of women has increased from 16% to 26%. There was also a rise in the proportion of adults with a raised waist circumference from 20% to 34% among men and from 26% to 47% among women over the same period.

Latest figures from 2011 suggest that overweight and obesity costs the NHS £5.1 billion per year⁴, while in 2007 the Foresight Report revealed a £16 billion cost to the wider economy. It has been predicted that, unless something is done, obesity costs could rise to £50 billion a year by 2050²⁰. The cost of healthcare for overweight or obese people is estimated to be around 30 per cent higher than for people with a healthy BMI²¹.

The Department of Health policy for 'reducing obesity and improving diet' (2013)²² recognises the need to help people eat and drink more healthily. Plans to improve labelling on food and drink to help give members of the public the information they need to make healthier choices were included in the policy, with the goal being to reduce the nation's daily calorie intake by five billion.



“ The cost of healthcare for overweight or obese people is estimated to be around 30 per cent higher than for people with a healthy BMI. ”

3

Alcohol as a public health issue

Alcohol has been causally linked to more than 60 different medical conditions²³ and is said to be the second largest risk factor for disease burden in Europe²⁴, after smoking.

People in the UK drink more alcohol in one sitting than any other country in Europe, with 12% of adults typically consuming more than seven drinks in a single day when they drink alcohol according to the European Commission (EC) 2010 report 'EU Citizens' attitudes towards alcohol'. UK drinkers were also the fifth most likely to have 'binge drunk' (i.e. consumed more than five drinks in one sitting) at least once in the week prior to taking the survey².

The Organisation for Economic Co-operation and Development (OECD) reported that between 1980 and 2009 there was an average global reduction of 9% in the volume of alcohol being consumed. During this period, the UK population increased its intake by 9%³. Social marketing data from the Department of Health (2010)²⁵ revealed that 83% of people who regularly drink above recommended guidelines do not think their drinking is putting their long-term health at risk.

Gender	NHS recommended daily guidelines (not more than)	Department of Health definition of 'binge drinking' (in a single session)
Men	3-4 units	More than 8 units
Women	2-3 units	More than 6 units

The Government's Alcohol Strategy estimates that alcohol-related ill-harm costs society around £21 billion per year, broken down as £3.5 billion in NHS costs, £11 billion in alcohol-related crime and £7.3 billion in lost-productivity⁵. In 2012 there were 8,367 alcohol-related deaths in the UK.

The 2010 EC report revealed that while 64% of UK drinkers felt that individuals are responsible enough to protect themselves from alcohol related harm, 32% felt that public authorities must intervene to protect the public².

In March 2012 the Government published its Alcohol Strategy, with Prime Minister David Cameron naming tackling 'binge drinking' as the principal aim⁵. Following a Consultation on this strategy the Government announced plans to continue to work closely with the alcohol industry to promote responsible drinking and to increase its support of community partnerships to reduce binge drinking and antisocial behaviour²⁶. The Consultation has attracted some criticism for not going as far as was expected with legislation on minimum pricing for alcohol and a ban on multi-buy promotions²⁷.

4

The links between alcohol and weight

While it's clear that alcohol and obesity are both recognised as huge public health issues in their own right, the link between the two is less discussed.

Alcohol can have a significant impact on body weight. Weight gain occurs when a person's energy intake is greater than their energy expenditure. Alcohol impacts on a person's energy intake because as well as containing energy itself, it also often leads to a higher food intake due to its ability to stimulate appetite and increase disinhibitions around food.

Energy contained in alcohol

Alcohol provides 7 calories per gram, which means that just a couple of alcoholic drinks can contribute considerably to the day's energy intake. For example, a pint of ordinary beer provides 180 calories, a 175ml glass of wine approximately 160 calories and a 275ml bottle of alcopop, 192 calories. Among adults aged 19-64, alcohol provides 8.8% of daily energy intake²⁸.

Type of drink	Typical units	Typical calorie value
Wine (standard 175ml glass at 13% ABV)	2.1 units	160 calories
Wine (standard 250ml glass at 13% ABV)	3 units	228 calories
Low strength beer/lager (pint at 3.6% ABV)	2 units	180 calories
Higher strength beer/lager (pint at 5.2% ABV)	3 units	244 calories
Regular strength cider (pint at 4.5% ABV)	2.6 units	256 calories
Strong cider (pint at 7.5% ABV)	4.3 units	386 calories
Single measure of spirit (25mls at 40% ABV)	1 unit	54 calories
Single measure of liqueur (25ml at 37% ABV)	1 unit	80 calories
Bottle of alcopop (275ml at 5% ABV)	1.4 units	192 calories

While alcohol contains energy, it doesn't stimulate satiety. As a result, unlike other macronutrients, alcohol calories are more likely to be consumed in addition to total energy intake^{29, 30}.

There is some evidence that not everyone uses the energy from alcohol with equal efficiency and this may be influenced by body mass³¹. People who consume larger amounts of alcohol or consume alcohol on a daily basis also appear better able to burn off alcohol calories than people who don't drink every day³². This would suggest that infrequent drinkers are more at risk of storing calories and so gaining weight than people who drink more often in moderation.

Increase in food intake after drinking alcohol

Excessive alcohol consumption, binge drinking and drinking alcohol at mealtimes are all associated with poor adherence to healthy eating guidelines³³.

Alcohol consumed shortly before or with meals tends to increase food intake^{29, 30, 34-37}. For example, male volunteers given 330ml of no-alcohol lager or the same lager spiked with 3 units of alcohol consumed significantly more energy from a buffet lunch after drinking the alcohol (1745 calories) than after the no alcohol condition (1549 calories) or a control, no drink condition (1521 calories). Total energy intake (including energy from alcohol) was enhanced by 30% in the alcohol condition²⁶.

Another controlled intervention study evaluated the impact of wine consumed as an aperitif or with a meal³⁴. The results showed a difference in food intake of around 290 calories on average between people who consumed wine and those who didn't, with participants who drank wine before their meal consuming 1,538 calories, participants who had wine with their meal having 1,495 calories and participants who hadn't drunk any alcohol consuming 1,225 calories, again suggesting the effects of alcohol are immediate and stimulate food intake early in the meal.

The stimulatory effect on food intake may be mediated via the effect of alcohol on various metabolic processes implicated in appetite control, such as stimulation or inhibition of appetite regulatory hormones³⁵ and in particular through enhancing the short-term rewarding effects of food³¹ or increasing disinhibition³⁷.

In a US study³⁶ of 282 'college freshmen' where people who consumed alcohol were defined as low-risk drinkers or moderate-risk drinkers, depending on their consumption habits, moderate-risk drinkers reported increases in appetite after drinking. Nearly half of this group reported overeating and making unhealthy food choices after drinking, resulting in a significant increase in their BMI after the first semester. Low-risk drinkers were less likely to report these changes in their behaviour after drinking.

In a German study³⁷ of female university students, participants were assigned to two groups. In one group they were asked to taste and rate an alcoholic beverage and in the other they were asked to do the same thing with a non-alcoholic beverage. They were then given the opportunity to taste 'chocolate candy'. The group that had consumed alcohol ate significantly more candy. The researchers concluded that alcohol disrupts reflective determinants and increases impulsive determinants, meaning people are more likely to act on impulse and eat more.

Heavy drinking, binge drinking and obesity

Heavy alcohol intake contributes directly to weight gain and obesity^{38, 39} as may binge-drinking,^{5, 40} and is associated with abdominal obesity, particularly in men⁴¹⁻⁴³.

A UK study among 3,327 men aged 60-79 years found that higher alcohol consumption (more than 21 units per week) was positively associated with obesity and, to a greater extent, with abdominal obesity⁴². Another study among 4,743 Portuguese adults found that current and lifetime alcohol consumption were both positively associated with overall and central obesity, in both women and men, independently of social and behavioural aspects. Men who consumed more than 60g of alcohol per day were more likely to be obese compared with non-drinkers⁴³. The link between alcohol and obesity strengthened with lifetime intake in both men and women.

In a Swedish study among a cohort of 807 older men, high alcohol intake was not associated with BMI but was positively related to waist circumference and hence abdominal obesity – which might explain the higher diabetes risk previously observed in high alcohol consumers⁴⁴. Greater central obesity in relation to alcohol intake was also found in a study among adults in Korea⁴⁵, while among a sample of 534 older Australian men, higher alcohol intake was associated with both greater total and central obesity and also reduced bone quality⁴⁶.

It is worth noting that very high intakes of alcohol, as seen in cases of dependency, can cause underweight as alcohol calories begin to displace food calories. However, this is not relevant to the majority of heavy alcohol consumers.

“ The stimulatory effect on food intake may be mediated via the effect of alcohol on various metabolic processes implicated in appetite control, such as stimulation or inhibition of appetite regulatory hormones and in particular through enhancing the short-term rewarding effects of food or increasing disinhibition. ”

Moderate and frequent drinking for healthy weight

While these data suggest that alcohol, particularly high intake, is a risk factor for obesity, other data suggest that moderate alcohol intake is associated with less obesity, particularly in women.

In a US survey, current drinkers had lower odds of obesity compared with non-drinkers and binge drinkers (who drink infrequently but in larger volumes). The odds of overweight and obesity were significantly less in those drinking one or two drinks a day and those drinking less than five drinks per week, than either binge drinkers or those consuming four or more drinks per day³⁸.

In another study, women who consumed a light to moderate amount of alcohol gained less weight and had a lower risk of becoming overweight and/or obese during 12.9 years of follow-up than women who didn't drink any alcohol⁴⁷. Post-menopausal women of normal weight reporting moderate alcohol intake have also been found to have a reduced risk of becoming overweight or obese over time⁴⁸.

Frequency of alcohol intake has also been found to have an impact on obesity.

A Danish study found that, for a given level of total alcohol intake, obesity was inversely associated with drinking frequency, whereas the amount of alcohol intake was positively associated with obesity⁴⁹. In a further study by this research group, a greater frequency of drinking was associated with a lower risk of waist circumference gains⁵⁰. A French cross-sectional study also found that, for a certain total alcohol intake, the number of drinking episodes was inversely associated with body mass index and waist circumference⁵¹.

These findings suggest that frequent drinking of small amounts of alcohol within recommended guidelines is the optimal drinking pattern with regards to obesity prevention.

Influence of alcohol on sleep

Alcohol consumption is associated with short sleep duration⁵² and reduced sleep quality⁵³. Sleep onset latency (i.e. getting off to sleep) is often reduced, with a more consolidated sleep in the first half of the night but then an increase in sleep disruption in the second half of the night. With moderate to high intakes of alcohol, REM sleep (dream sleep and the best quality sleep) is reduced significantly but lower amounts of alcohol show no apparent effect.

There is emerging evidence suggesting that a link exists between how much people sleep and how much they weigh, with people who get too little sleep tending to weigh more than those who get enough sleep⁵⁴.

5

The importance of the tipping point

Introduction

Findings from the literature review suggest heavy drinking and binge drinking could lead to weight gain.

Working with YouGov, Slimming World set out to find the precise tipping point at which point people start to engage in behaviours that will likely cause them to gain weight e.g. increase their energy intake by consuming more alcohol and more food than planned, and also how passing this point impacts on other behaviours such as physical activity levels and quality of sleep.



Methodology

A comprehensive 51-question survey was designed to analyse respondents' drinking habits and behavioural impacts, looking at the areas of additional alcohol consumption, additional food consumption, physical activity plans and quality of sleep, as well as knowledge of alcohol's impact on weight.

Respondents were asked at what point when drinking alcohol they begin to make unhealthy choices around food and drinking more alcohol than planned. They were then asked to detail the additional alcohol and food they would typically go on to consume on the same evening after reaching this tipping point by selecting options from a list. They were also asked how drinking past this tipping point impacted on their sleep and their food and physical activity choices the following day. Further questions asked respondents to estimate how many calories were in certain alcoholic drinks.

The survey was conducted as an online interview to a GB representative adult sample of 2,042 members of the YouGov panel. Fieldwork was undertaken in December 2013. The figures have been weighted and are representative of all GB adults (aged 18+).

Results

All statistics taken from the survey unless otherwise stated.

Alcohol consumption

Of the 2,042 respondents, 78% said that they sometimes consume alcohol, with 65% saying they have at least one drink during a typical week. Among those who consume alcohol, the average weekly consumption reported by men was 23 units and for women 13 units. A previous study by University College London found a significant difference between alcohol sales and what people say they drink, suggesting that many respondents could have underestimated their consumption⁵⁵. The most popular drink was found to be wine (drunk by 56% of alcohol consumers in a typical week), followed by beer/lager (45%) and spirits (32%). There was a noticeable difference between the genders, with beer/lager being the top choice for men and wine being the top choice for women, but a larger proportion of men said they drink both wine and beer.

More than half (53%) of respondents reported that they consume the majority of their alcohol in the home, while 24% said the majority of their drinking is done in licensed premises. Of respondents who drink alcohol in the home, only 9% said they use a proper measure to ensure they know how much they're drinking. A majority 61% said they estimate how much they're consuming, while 22% said they don't bother keeping track. This again suggests that it's likely that many people consume more than is reported.

Around half of alcohol consumers (47%) said they drink their weekly alcohol intake in only one or two days.

Respondents who consume all their week's alcohol in one session (28% of alcohol-consuming respondents) reported drinking an average of 9.3 units per week. Similarly, 19% consume all of their week's alcohol in two sessions, drinking 17.8 units per week on average. Therefore the average alcohol consumption for both of these groups is above the level typically defined as binge drinking^{14, 15}.

“ Around half alcohol consumers (47%) said they drink their weekly alcohol intake in only one or two days. ”

Tipping point

A person's tipping point was defined as the amount of alcohol they drink before they start to make unhealthy choices including drinking more alcohol than planned or making unhealthy food choices, or cancelling planned physical activity.

Of the 1,584 respondents that sometimes drink alcohol, 51% acknowledged that drinking more than a certain amount of alcohol impacts on their choices. Respondents reported an average tipping point of 9.3 units of alcohol - equivalent to 3.7 pints of beer or 3.1 large glasses of wine. Men reported an average tipping point of 10.5 units of alcohol, while women reported an average tipping point of 8 units of alcohol. These unit values are similar to those reported by the NHS¹³, Department of Health¹⁴, Royal College of Physicians¹⁵ and European Commission² in their definitions of 'binge drinking', suggesting that binge drinkers are more at risk of passing their tipping point than those who drink alcohol in moderate amounts. Of those who acknowledge their tipping point, a majority 58% reported passing this point at least once on a typical weekend (Friday to Sunday), with 19% passing it twice or more in this period. A further 36% said they pass their tipping point at least once during the week (Monday to Thursday), with 18% saying they pass it twice or more.

Gender	Typical definition of binge drinking*	Average 'tipping point'	Percentage who pass their tipping point at least once on a typical weekend**
Men	More than 8-10 units in a single session	10.5 units	60%
Women	More than 6-7 units in a single session	8 units	55%

* Taken from binge drinking definitions by The Department of Health¹⁴, the Royal College of Physicians¹⁵ and the European Commission².

** Only includes people who acknowledge that they have a tipping point with alcohol. Those who don't acknowledge a tipping point are excluded.

Average tipping point of 9.3 units

3.7
pints of



3.1
glasses of



Additional energy intake as a result of passing a tipping point

It is recommended that to maintain a healthy weight, men should consume an average of 2,500 calories per day and women should consume an average of 2,000 calories per day⁵⁶.

The average additional energy intake that same evening as a result of passing the tipping point was estimated to be up to 4,305 calories in food and additional alcohol – 4,920 for men and 3,654 for women. These calorie values were estimated from the food and drink data provided by respondents who were asked what they would typically go on to eat or drink after passing their tipping point. This is approaching double the recommended daily calorie guidelines for both genders.

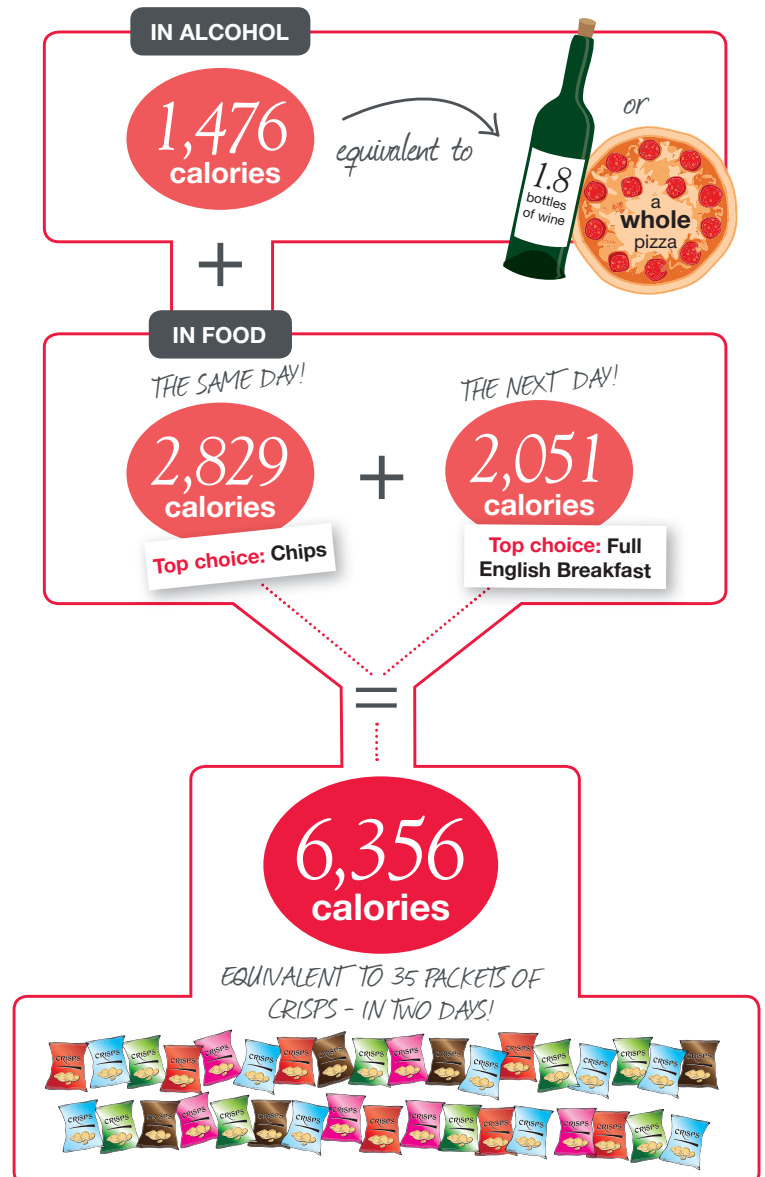
Gender	Number of calories required to maintain weight
Men	2,500 calories per day
Women	2,000 calories per day

Respondents' reported additional alcohol consumption after passing the tipping point was estimated at 1,476 calories – equivalent to around 4.5 pints of cider or two bottles of wine. Men reported consuming a significantly higher number of additional alcohol calories than women as a result of passing their tipping point – 1,794 calories compared to women's 1,119 calories. This alone is more than half of the recommended daily calorie intake for both genders and several times more than the recommended unit levels for daily alcohol consumption. Furthermore, when asked to estimate the number of calories contained in wine, 57% of respondents underestimated, while 58% underestimated the number of calories in beer/lager. Around 20% said they 'don't know' how many calories these drinks contain.

Of respondents who said that passing their tipping point had a noticeable impact on their behaviour around food, 63% reported being more likely to eat a larger amount, 57% more likely to snack on a family-sized packet of crisps or nuts, 58% more likely to order a takeaway, 65% more likely to rely on convenience food and 34% more likely to go out for an unplanned meal. After passing their tipping point, respondents' reported additional food intake was estimated at 2,829 extra calories – 3,126 calories for men and 2,535 calories for women. A portion of chips was reported to be most commonly eaten food as a result of a person passing their tipping point, with 22% of respondents saying that this would be the food they would be most likely to eat on a typical evening. Pizza, kebab and hamburger were each chosen by 10% of respondents as the food that they would most typically eat after passing their tipping point. Other common food choices for respondents after they'd reached their tipping point included crisps, nuts and chocolate. Alongside additional alcohol intake that evening, this adds up to a total average of 4,305 additional calories that evening.

Respondents who reported additional food intake after passing their tipping point said they also consumed an additional 2,051 calories in food the following day. Common food choices the next day included a full fried English breakfast, chips, pizza, crisps, chocolate or biscuits. In total, this took the average additional calorie intake to an estimated 6,356 calories over a 24-hour period for respondents, who said they would typically continue drinking past their tipping point, eat unhealthily that day and eat unhealthily the following day. Coupled with cancellation of physical activity plans (detailed p20), this additional energy intake could cause an estimated weight gain of around 2lbs per session as a result of passing the tipping point*.

* 1lb in weight is said to be the equivalent of 3,500 calories^{7,8}. While this sort of estimate doesn't allow for differences in individuals, and weight loss or gain is often a combination of fat, lean tissue and water, it is a good rule of thumb when looking at population data.



Source of additional calories	Estimated additional calories*
In alcohol that evening	1,476 calories
In additional food that evening	2,829 calories
In additional food the following day	2,051 calories
Total	6,356 calories

* Calorie values were estimated from the food and drink data provided by respondents

While the nature of the survey means that these calorie values should be treated as estimates rather than specifics, the responses show clearly that drinking past the tipping point leads to excess calorie consumption.

Impact of passing tipping point on physical activity plans

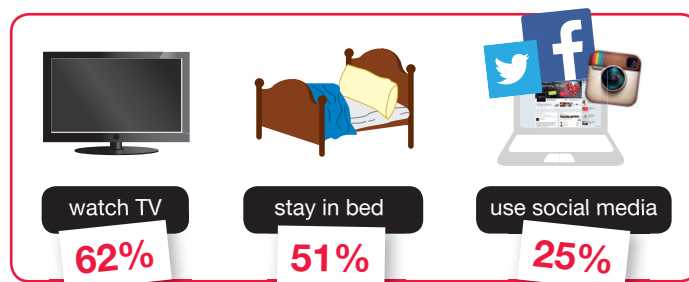
Respondents' physical activity plans the following day were much more likely to be disrupted by drinking larger volumes of alcohol than by drinking smaller volumes. Only 9% of alcohol consumers said they would be likely to cancel activity plans for the following day after drinking a small amount of alcohol, but this more than tripled to 31% when respondents considered how drinking a large amount of alcohol would affect their plans.

Among the group that acknowledged that drinking a certain amount of alcohol can impact on their food and alcohol choices, 50% of respondents said they would cancel physical activity plans the day after passing their tipping point. A gym visit was reported to be

the most likely activity to be cancelled (29%), followed by running (25%) and a fitness class (22%). Only 16% of people said they would still continue with their physical activity plans the next day after passing their tipping point. This was slightly higher among older age groups, with 24% of 45-54 year olds reporting that they would continue with physical activity plans, compared to just 11% of 18-24 year olds.

Once physical activity plans had been cancelled, 98% of respondents reported that they would instead engage in sedentary activities. A total of 62% would watch TV, 51% would stay in bed, 39% would sit down and 25% would spend time on social media rather than taking part in their previously planned physical activity.

This suggests that as well as the additional calorie intake from food and alcohol that appears to follow a person passing their tipping point, there is also likely to be a fall in energy expenditure from planned physical activities. This could result in an even greater energy imbalance and further increase the likelihood of weight gain.



Impact of passing tipping point on sleep

After passing their tipping point, respondents reported a range of behaviours associated with poor quality sleep. They were more likely to go to the toilet in the night (49%), more likely to toss and turn in the night (34%), more likely to struggle to get out of bed in the morning (40%), less likely to remember their dreams (35%) and less likely to feel refreshed the next day (63%). When asked about having a bad night's sleep in general, regardless of alcohol intake, 21% said they would be more likely to choose unhealthy foods the next day after having a bad sleep and 41% said they would be less likely to be physically active.

These findings in relation to alcohol and sleep add to the cumulative impact passing your tipping point could have on energy balance and, in turn, weight.

Summary of key findings

- Around half (47%) of alcohol consumers drink all of their alcohol across 1-2 days, rather than spreading it evenly through the week – suggesting a 'binge drinking' culture
- The average tipping point – the point at which people go on to make unhealthy choices with food and alcohol – is 9.3 units of alcohol. This is equivalent to 3.7 pints of beer or 3.1 large glasses of wine. Fifty-one per cent of alcohol consumers acknowledge a tipping point with alcohol
- The average additional energy intake after a person has passed their tipping point is an estimated 4,305 additional calories that same evening in alcohol and food - more than twice the recommended daily calorie guideline for an adult woman
- More than half of people (58%) who acknowledge a tipping point report that they pass this point at least once on an average weekend
- The day after passing their tipping point, 50% cancel planned physical activity, which is often replaced with sedentary activity such as watching TV or staying in bed
- People continue to make unhealthy food choices the day after passing their tipping point, with an average additional calorie intake of an estimated 2,051 calories – taking the estimated total additional calorie intake to over 6,000 in two days
- People are more likely to have poor quality sleep after passing their tipping point which can lead to further unhealthy lifestyle choices.

6

Discussion

There is currently not enough guidance for members of the public about the links between the two major public health issues of obesity and excess alcohol consumption.

Evidence suggests that drinking past the tipping point can have a significant impact on behaviour, causing people to consume more energy in food and alcohol and to burn off less energy in physical activity, while also affecting sleep.

With the average tipping point typically occurring after only 3-4 alcoholic drinks, it's clear that it is easy for people to drink enough alcohol to see these changes in their behaviour.

It has been found that binge drinking is associated with obesity, while the best way for alcohol consumers to protect against the impact of alcohol on weight is to drink in moderation. It has been estimated that passing the tipping point could cause an average weight gain of around 2lbs per occasion in people who do not compensate for changes in their behaviour as a result of passing this point.

With a majority of people that acknowledge their tipping point reporting drinking past this point at least once on a typical weekend, it's clear that more needs to be done to provide people with the information and support they need to make healthier choices.

So Slimming World is making two recommendations to help people understand how alcohol impacts on weight (please see over the page).

7 Recommendations

Recommendation 1: Slimming World calls on Government and health authorities to improve the links between public health campaigns on obesity and alcohol by raising awareness of how drinking too much alcohol can impact on weight-affecting lifestyle behaviours.

Change4Life and the NHS provide information on the direct health risks of drinking above the recommended units of alcohol for men and women. They have also begun to include some limited information in their literature about the calories contained in alcohol and how this can impact on weight (though as stated in Recommendation 2 we believe more needs to be done in this area). However, there is currently a real gap when it comes to raising awareness among the general population of how drinking a certain amount of alcohol can impact on lifestyle choices and, in turn, people's weight. By stimulating appetite, increasing the rewarding effects of food and increasing disinhibition around food, alcohol often leads to more unhealthy food choices. In addition to further demonstrating the impact of alcohol on our food choices, our research shows that drinking past the tipping point can cause some people to consume more alcohol than planned, cancel planned physical activity and have disrupted sleep.

Our research suggests that those who drink excessively and consume large amounts of alcohol in a single sitting are more likely than people who drink within the recommended guidelines to pass their tipping point, which could lead to them indulging in weight-affecting lifestyle behaviours. This finding gives even greater strength to the Government's message for people to drink alcohol in moderation and further strengthens the importance of tackling the binge drinking culture.

To be effective in reducing the impact of obesity and drinking alcohol to excess, we must begin to link these two key areas of public health more clearly. Information about how drinking too much alcohol can impact on lifestyle choices that affect weight should be built into all public health communications on alcohol. Providing people with this information will enable them to take greater personal responsibility for their health and their weight. It will lead to a greater awareness of the risks of drinking alcohol to excess and, we believe, more responsible drinking and lower rates of obesity.

Recommendation 2: Slimming World calls on the Government to raise awareness of the calories contained in alcohol by supporting clear labelling on alcoholic drinks.

Calorie information is not readily available for alcohol consumers and our research shows that most people underestimate how many calories are contained in alcohol.

The Government has included limited information on calories contained in alcohol within its Change4Life campaign and through NHS communications, and has concerns around consumers swapping calories in food for those in alcohol.

Research has found that being aware of the number of calories contained in a meal influences people to make healthier choices⁹⁻¹² and our own research of 2,616 Slimming World members suggests that a calorie count on labels could be similarly effective with alcohol. The Slimming World programme has been designed to help members navigate towards healthier choices. While low energy dense foods like fruit and vegetables, pasta, potatoes, pulses, lean meat, poultry and fish are recognised as ‘safe’ for weight loss and so can be eaten freely without counting, alcohol products (like other high energy dense foods and drinks that can be a danger to weight loss) are controlled and given a numerical ‘Syns’ value, with members encouraged to stay within a daily total limit of Syns. A typical member, following the plan within their daily Syns allowance, is automatically within the recommended NHS daily guidelines for alcohol and can still enjoy a drink in moderation (e.g. a couple of glasses of wine or bottles of beer). This structure helps members to navigate towards a healthier lifestyle, while raising each member’s awareness to the greater risk which alcohol (as well as high calorie foods like crisps, chocolate, pastries or biscuits) poses to their weight management when consumed to excess. Ninety percent of Slimming World members say that ‘counting’ alcohol in this way has enabled them to make healthier choices and 86% say they drink less alcohol now since joining Slimming World.

While Slimming World members have the benefit of a programme that increases their awareness of the impact of alcohol on their weight, the general public does not. The onus is on the Government to increase pressure on industry to add calorie information to alcohol labels as well as increase understanding of the effect alcohol has on behaviour and healthy choices.

Sainsbury’s, Co-op and Waitrose have already introduced calorie counts on some or all of their own-brand alcohol labels as part of the Alcohol Responsibility Deal Network and this needs to be more widely adopted by

major alcohol brands. It simply isn't enough to host this information on manufacturer websites and expect consumers to seek it out, as research shows this rarely happens⁶.

Eighty-six percent of Slimming World members (people actively committed to managing their weight) believe that adding a calorie count to alcohol labels would increase the public's awareness of the link between alcohol and weight and 62% believe it would reduce the amount of alcohol consumed.

Slimming World believes that these two measures would have a significant impact on raising awareness of how alcohol can affect weight and go some way towards helping people to make changes to their lifestyle and behaviour around alcohol. This will contribute to reducing the impact of alcohol on obesity and improve public health. It is Slimming World's hope that the Government will be tipped into action by this report.



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