



## The Benefits of Moderate Beer Consumption



THE BENEFITS OF MODERATE

# Beer Consumption

Third Edition  
The Brewers of Europe  
2004

## Acknowledgements

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# Preface

This booklet summarises the current state of knowledge on the beneficial effects associated with moderate consumption of alcoholic drinks, in particular beer. The hundreds of different types of beer that are brewed across Europe share the established beneficial effect associated with alcohol content and the potential benefits which may be associated with the natural raw materials from which beer is brewed.

This edition has been compiled by the Brewers of Europe to inform the general public of the clear evidence that beer, a wholesome beverage and a staple part of our diets for thousands of years, is not only good to drink but may also be good for health when consumed moderately.

The information is not intended to encourage people who do not drink beer for whatever reason to start to consume beer, or other drinks, on health grounds. The intention is to inform and reassure those who enjoy drinking beer that, when consumed moderately, it is not a health risk and there may be a net benefit.

Although, for the population as a whole, moderate alcohol consumption may offer significant health benefits, the negative health effects of excessive consumption of alcoholic drinks are clear. These have been well documented elsewhere and are not covered in this booklet.

The first and second editions of this booklet were inspired by two one-day seminars on the health benefits of moderate alcohol consumption and the healthful properties of beer held in November 1999 and October 2001. These can be found on the Brewers of Europe website [www.brewersofeurope.org](http://www.brewersofeurope.org).

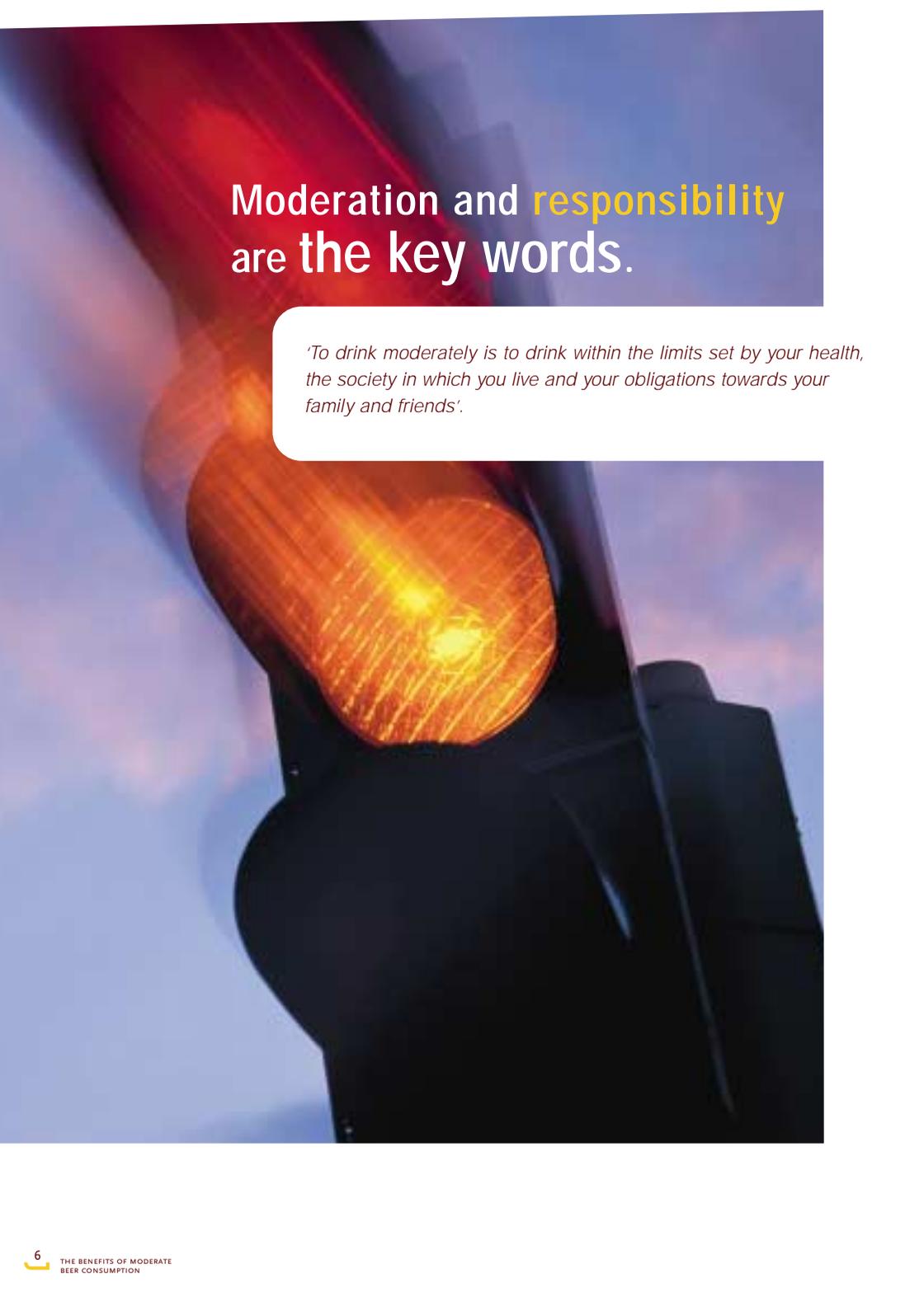


This, the third edition, follows a further symposium held in October 2003 during which experts from across Europe examined the latest scientific evidence on this subject. Speakers included Dr. Gerard Vachonfrance, France: Prof. Dr. Med. Ulrich Keil, Universität Münster, Germany: Prof. Emeritus Ivo De Leeuw, University of Antwerp, Belgium: Dr. Henk Hendriks, TNO, The Netherlands: Prof. Jonathan Powell, St Thomas' Hospital, London, UK: Prof. Dr. Med. Arne Astrup, Denmark: and Dr. Ascensión Marcos, Spain. Their presentations, and their emphasis on the importance of lifestyle, are the main reasons for the Brewers of Europe being inspired to revise this edition.

At the first Beer and Health Symposium the Chairman concluded that beer played a part, along with other alcoholic drinks, in reducing the risk of heart disease and there was also preliminary evidence of benefits of beer consumption, which may be different from those of other drinks, which warranted more detailed investigation. Since then research has progressed and some new results and ideas about the health benefits of beer consumption have now been published.

This edition provides an overview of the published research on the proven and potential benefits of moderate beer consumption. It includes an updated section on the reduced risk of coronary heart disease and more detailed information about the growing number of additional benefits associated with moderate consumption. Many new references are cited in support of this evidence and the research into the benefits which may be associated with the natural raw materials from which beer is made. Finally the sections describing the importance of a healthy lifestyle and the lack of evidence of a link between moderate consumption and obesity has been revised in the light of the most recent research.

Janet Witheridge  
Editor.



# Moderation and **responsibility** are the key words.

*'To drink moderately is to drink within the limits set by your health, the society in which you live and your obligations towards your family and friends'.*



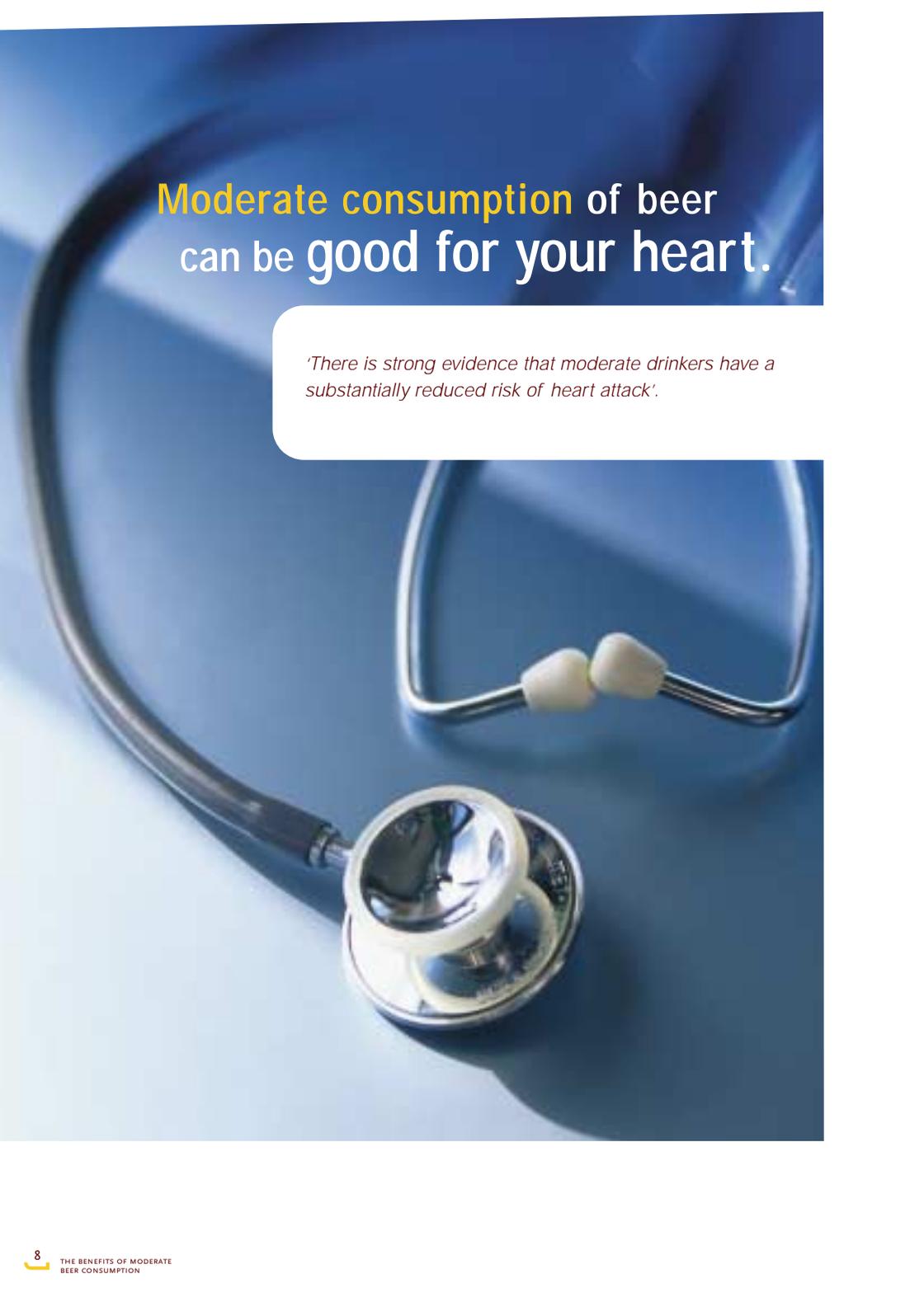
This booklet concentrates on the effects of responsible consumption of beer. It must be stressed that the beneficial effects reported apply only to moderate consumption by healthy adults. Heavy drinking, whether in binges or regularly, can be harmful and is associated with many chronic health problems.

Dr Skovenborg, speaking at the second symposium, defined moderation in the following terms. “To drink moderately is to drink within the limits set by your health, the society in which you live and your obligations towards your family and friends: 1 – 3 drinks a day for most men”. “Women are more sensitive to alcohol so they are advised to drink less than men: 1 to 2 drinks a day.”

The amount of alcohol in “a drink” of beer can vary considerably depending on the size of the glass and the alcoholic strength and will differ slightly across Europe according to historic traditions and customs. “A drink” here, and when referred to in other parts of this booklet, is defined as a 0.25litre glass (approximately half a pint of beer in the UK or Ireland) with a strength of between 4 and 5 per cent alcohol by volume (% abv). This would have an alcohol content of about 10g.

While these are useful guidelines it must be remembered that they only apply to healthy adults and there are some situations where even moderate drinking means misuse. Examples of situations where it may not be appropriate to drink at all include during pregnancy, before driving or operating machinery or when taking certain medication.

The brewing industry is mindful of the dangers of alcohol misuse. To this end it has produced numerous educational programmes and campaigns to avoid misuse such as those to prevent drink-driving and discourage drinking by people under the legal drinking age. A recent publication by the Worldwide Brewing Alliance lists more than 360 initiatives funded by the brewing industry worldwide. It is available on the website of The Brewers of Europe [www.brewersofeurope.org](http://www.brewersofeurope.org)



**Moderate consumption** of beer  
can be **good for your heart.**

*'There is strong evidence that moderate drinkers have a substantially reduced risk of heart attack.'*



Coronary heart disease or heart attack is the leading cause of premature death in the developed world. Preventive measures include modification of lifestyle factors such as adopting a healthy diet and taking exercise. Moderate consumption of beers, wines and spirits can be part of that healthy lifestyle.

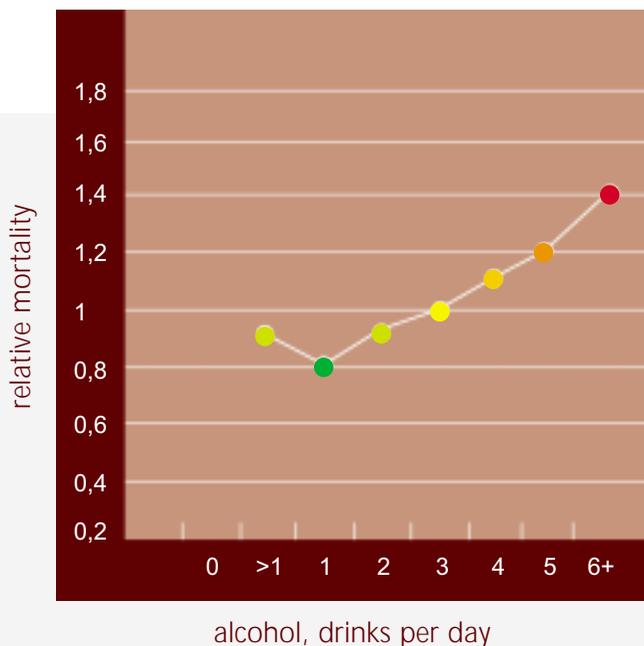
There is strong evidence that people who are moderate consumers of alcoholic drinks (beers, wines or spirits) have a substantially reduced risk of coronary heart disease when compared to teetotallers and heavy drinkers<sup>1</sup>. This has been shown in many studies throughout the world.

This reduction in risk (associated with approximately 3 alcoholic drinks a day) is on a par with other preventive measures such as the use of aspirin, weight control, and exercise<sup>2</sup>.

The benefit applies to a broad range of individuals including those considered to be of higher risk of cardiovascular disease<sup>3</sup> or who have diabetes<sup>4,5</sup>.



The “J shaped curve” (shown below) illustrates the effect that this reduction in the risk of coronary heart disease has on the risk of deaths from all causes. At moderate levels of consumption of alcoholic drinks the risk of early death is reduced relative to the risk in abstainers and heavy drinkers.



• *Figure 1: Alcohol and Mortality.*

Source: “Alcohol drinking and mortality amongst men enrolled in an American Cancer Society prospective study”<sup>6</sup>.

*There are several well-established explanations for this observed reduction in risk of coronary heart disease including the following:*



- **Blood Cholesterol levels**

The mechanism which has been shown to be responsible for the majority of the effect, is that the amount of 'good fat', (HDL cholesterol), in the blood increases when alcohol is consumed. Higher levels of 'good fat' have been shown to be associated with lower risk of coronary heart disease. Research has shown that one glass of beer a day can significantly increase HDL cholesterol levels<sup>7</sup>.

- **Clotting**

Scientists have also shown that alcohol has a beneficial blood thinning effect and reduces the tendency of blood to form clots<sup>8</sup>.

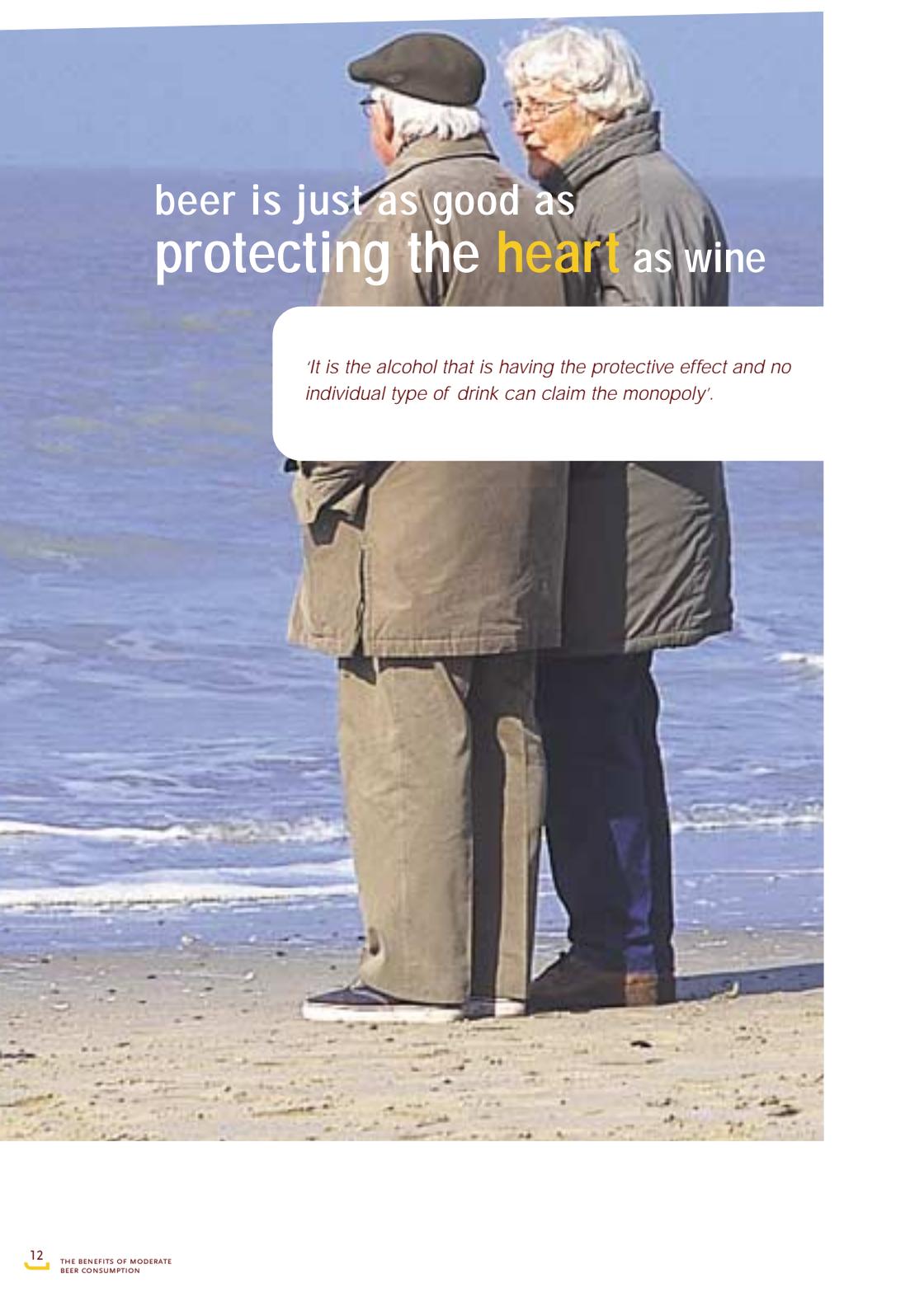
- **Inflammation**

Some researchers have suggested that alcohol may also have an anti-inflammatory effect and there is increasing evidence that atherosclerosis, which leads to heart attacks, is an inflammatory disease. Several recent studies have shown that moderate alcohol consumption<sup>9</sup>, including moderate beer consumption<sup>10,11</sup> caused a significant decrease in inflammation.

- **Insulin resistance**

Moderate alcohol consumption may be associated with lower levels of insulin resistance. Insulin resistance is linked to cardiovascular disease, so this may be an additional mechanism by which alcohol consumption reduces risk of cardiovascular disease<sup>12</sup>. Insulin resistance is also associated with diabetes mellitus (see page 17).

There is also evidence that light to moderate drinking may be protective against other cardiovascular diseases including the most common form of stroke<sup>13</sup> and it has also been shown to be associated with a slight decrease in cardiovascular and total mortality in people who have already had a heart attack<sup>14</sup>.

An elderly couple stands on a sandy beach, looking out at the ocean. The man on the left wears a dark beret and a brown jacket. The woman on the right has white hair and glasses, wearing a grey jacket. The ocean is blue with white waves breaking on the shore. The sky is clear and blue.

beer is just as good as  
protecting the **heart** as wine

*'It is the alcohol that is having the protective effect and no individual type of drink can claim the monopoly'.*



There have been many studies, which have attempted to compare the effect of beer, wine and spirits to see whether they are equally protective against cardiovascular disease but when the evidence is examined it is clear that the major protective agent is alcohol itself<sup>15</sup>. The protective effects of alcohol consumption are seen in many different countries with different cultures and drinking habits and this, combined with the established mechanisms described above, confirms that it is the alcohol that is having the protective effect and no individual type of drink can claim the monopoly<sup>16</sup> in relation to cardiovascular disease.

Population studies usually show that the beverage most widely consumed in the population being studied shows the greatest benefit<sup>17</sup>. For example, in Germany and the Czech Republic, where beer is the favourite drink, research has confirmed the beneficial effect of beer<sup>18,19,20</sup>.





# Complicating factors

*'It is vital that lifestyle factors are compensated for in any research into the effects of alcohol on health'.*



There are many other factors, apart from what people drink, that influence their health. These factors include such issues as diet, social status, lifestyle, health behaviour and pre-existing disease which, to some extent, are determined by familial, social and cultural environments. Several publications have suggested that wine confers more health benefits than beer<sup>21</sup> but it now seems that dietary habits, other lifestyle differences connected with wine preference and even personality may explain this apparent difference<sup>22,23,24</sup>. For example, in some places, wine drinkers are more likely to have a better diet and exercise more and are less likely to smoke. They may also have a better education and a higher income and social status which are independently associated with better health. It is therefore vital that these factors are compensated for in any research into the effects of alcohol on health.

Another consideration is not just 'how much' but 'how often'<sup>25</sup>, in other words 'the manner or pattern in which' people are drinking<sup>26</sup>. The latest surveys show regular light to moderate consumption confers the lowest risk of heart attack<sup>17</sup>; people who occasionally 'binge' (in academic literature 'binge drinking' is usually defined as five or more alcoholic drinks consumed in one sitting) show an increased risk of coronary heart disease even when their consumption over a week is moderate<sup>27</sup> and may not benefit from the reduced risk of type II diabetes seen in moderate consumers<sup>28</sup>. Plausible explanations for this include an increased risk of high blood pressure in binge drinkers.

It is also thought that consuming alcoholic drinks with a meal is better than drinking on an empty stomach although the researchers are not unanimous on this subject<sup>1</sup>.



## Other beneficial effects from **moderate** beer consumption

*'Research evidence is also growing that regular moderate consumption of alcoholic drinks may be protective against many other conditions'.*



Research evidence is also growing that regular light or moderate consumption of alcoholic drinks may be protective against many other conditions. The reasons for these beneficial effects are not yet clearly understood and more research is needed to explain the mechanisms. As with cardiovascular disease a little seems to be protective whereas heavy consumption is harmful. Neither can the benefits usually be tied convincingly to one particular type of alcoholic drink.

- **Diabetes Mellitus**

*Late onset diabetes (type II diabetes mellitus) is a growing health problem in the Western world affecting between 6 and 8 per cent of the population. It is associated with many life-threatening complications including cardiovascular disease.*

Several studies have reported a lower prevalence of late onset diabetes in regular moderate drinkers<sup>28</sup>. The decreased risk has been shown to be considerable (about half) in both men<sup>29</sup> and women<sup>30</sup>. It is thought that moderate alcohol consumption has beneficial effects on insulin sensitivity and that this may explain some of the reduced risk compared to abstainers and heavy drinkers<sup>31</sup>.

- **Weakening of bones**

*Osteoporosis (weakening of bones) is common in elderly people especially in women after the menopause. Weak bones are at greater risk of fracture.*

Many studies suggest that light to moderate consumption of alcoholic drinks have a beneficial effect on bones which could reduce the risk of osteoporosis<sup>32</sup> and fractures. This protective effect could be partly explained by an increase in blood oestrogen levels associated with alcohol consumption in women<sup>33</sup> but this does not fully account for the effect. Research is underway to confirm whether the flavonoid content of beer or minerals such as silicon, which are present in some drinks, especially in beer, have an additional beneficial effect (see page 27).

- **Dementias**

*More than 3 million elderly people (65+) in the EU have dementia (cognitive decline associated with aging) and as life expectancy increases, dementia is becoming more prevalent and of increasing concern.*

Several studies have indicated that light to moderate consumption of alcoholic drinks is associated with a reduced risk of developing senile dementia and some show a considerable (about a quarter) reduction in risk<sup>34,35</sup>. There are several possible explanations for this beneficial effect which include: the reduced narrowing of blood vessels in the brain (similar to cardiovascular disease): the psychological benefits of moderate alcohol consumption: or possibly the decreased risk of diabetes. More research is needed before this apparent effect can be fully understood.

Researchers do not yet agree on whether alcohol consumption affects Alzheimer's disease, and both increased and decreased risks have been reported. A study which looked at the risk of Alzheimer's disease with alcohol by type found a reduction of risk for all drinks but the only statistically significant finding was for wine (50 per cent reduction in risk) and it is possible that other lifestyle factors are important in determining risk for this condition<sup>36</sup>.

There is also evidence that participation in social leisure activities, such as going to pubs and bars, visiting friends or involvement in clubs helps delay cognitive decline associated with aging<sup>37</sup>.

- **Parkinson's Disease**

*Parkinson's Disease is a common neurodegenerative disease mainly affecting people over the age of 50.*

Several studies have found that moderate alcohol consumption, including moderate beer drinking<sup>38</sup> and some additional lifestyle factors are associated with a lower risk of developing Parkinson's disease<sup>39</sup>.

- **Gallstones**

*Development of stones in the gall-bladder is one of the most common and costly digestive diseases in Western populations. By the age of 60 almost 30 per cent of men and women will have gallstones.*

Several studies have shown an association between moderate alcohol consumption and a decreased risk of developing gallstones<sup>40</sup>. This has been reported with consumption of all types of alcoholic beverages and the risk is lowest in those who consume frequently. There are several plausible explanations for this finding which include the effect of alcoholic drinks on cholesterol levels and reduced bile concentration.

- “Well being” (Psychotherapeutic value)

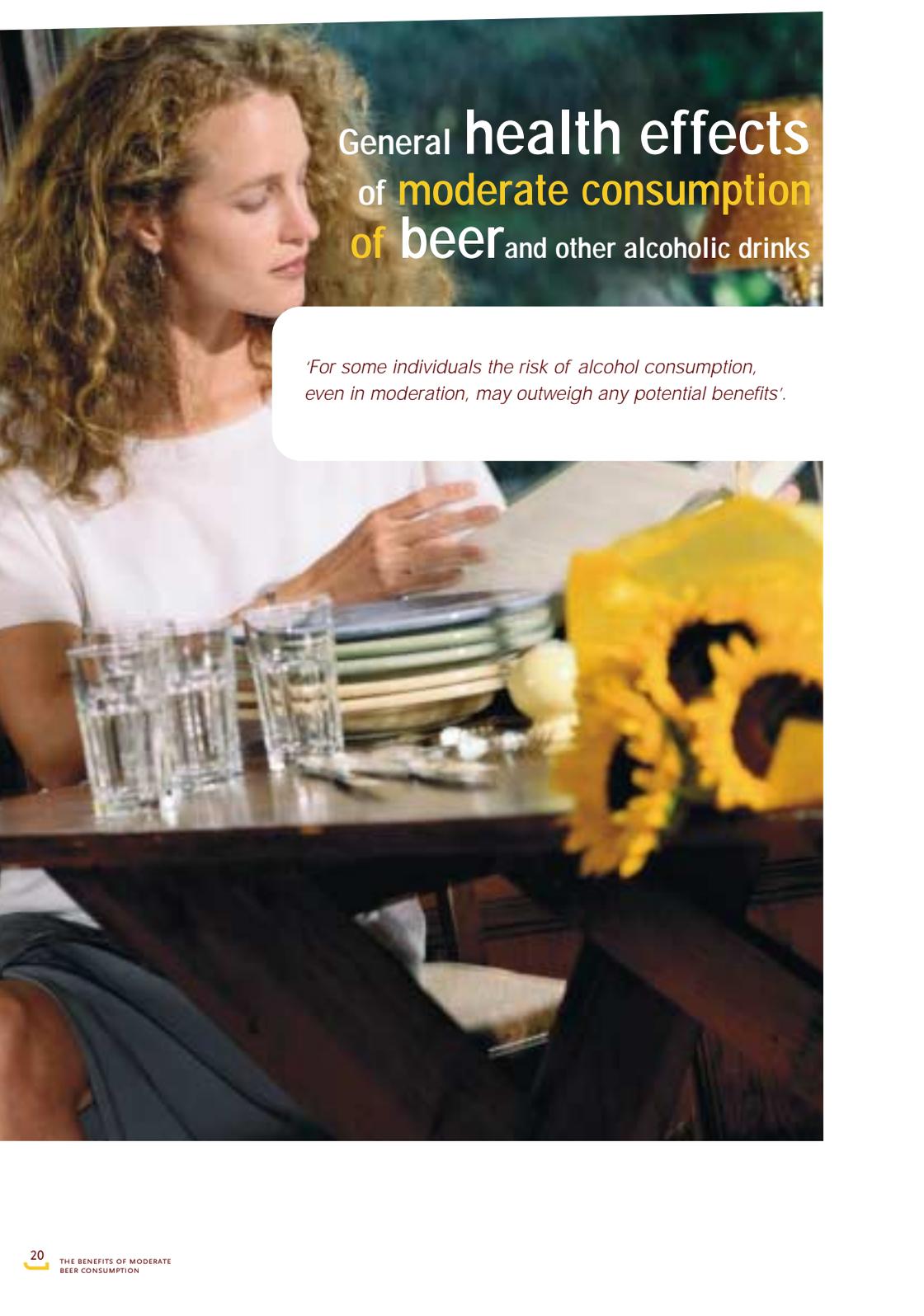
“One of the main reasons why the moderate drinking of alcoholic beverages is a common practice is that many people enjoy the relaxing, pleasant effect produced by one or two drinks” and “the psychotherapeutic value of this should be regarded as a potential health benefit<sup>41</sup>”.

Positive psychological benefits associated with moderate intake of alcoholic drinks are acknowledged by many experts but are more difficult to demonstrate scientifically. A recent review of the literature confirmed earlier findings that alcohol in moderate amounts is effective in reducing stress and tension and increasing feelings of well being<sup>42</sup>. The review found that, “to a greater degree than either abstainers or heavy drinkers, moderate drinkers have been found to experience a variety of psychological benefits”. More research is needed to explain mechanisms to account for the improved functioning and the part, if any, played by the social setting.

- General health

Researchers have also reported that people who drink moderately report “good health”<sup>43</sup> and believe they are more healthy<sup>44</sup>. This results in them feeling better about and having more positive attitudes to their health.





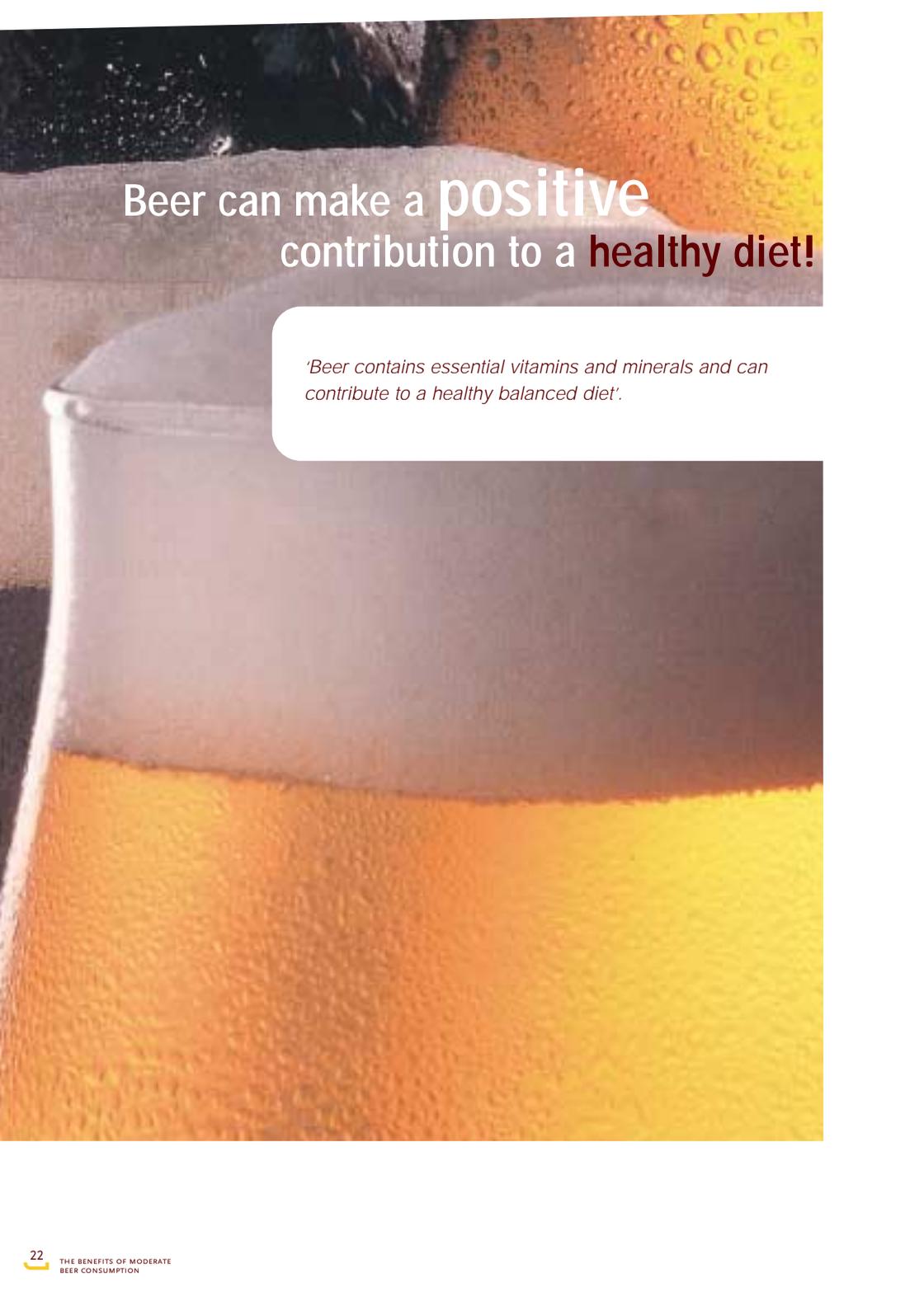
# General health effects of moderate consumption of beer and other alcoholic drinks

*'For some individuals the risk of alcohol consumption, even in moderation, may outweigh any potential benefits'.*



A large body of scientific evidence associates the moderate intake of alcoholic drinks with reduced mortality among middle-aged and older people in industrialised societies. This association is due largely to the reduced risk of death from coronary heart disease (heart attack) which appears to outweigh the possible adverse effects of moderate drinking<sup>41</sup>. However, these results apply to the population as a whole, and cannot be taken as medical advice on an individual basis. For some individuals the risk of alcohol consumption, even in moderation, may outweigh any potential benefits. For example, alcohol consumption has been associated with a slightly elevated risk of breast cancer<sup>45</sup>. On an individual basis general practitioners will be able to assess their patient's risk more precisely in the light of their health and family history of this condition. Similar considerations apply to those at risk of certain types of stroke and high blood pressure.





Beer can make a **positive**  
contribution to a **healthy diet!**

*'Beer contains essential vitamins and minerals and can contribute to a healthy balanced diet'.*



Beer is made from wholesome raw materials, malted barley, cereals, hops, yeast and water. All these are natural substances which contribute to a healthy, balanced diet. As with any natural food, thousands of components can be identified in beer including antioxidants, vitamins (particularly B vitamins), minerals such as silicon and fibre.

Beer is 93 per cent water and is a thirst quenching long drink which is relatively low in alcohol. In general lower strength drinks, like beer, have been shown to be absorbed more slowly from the stomach leading to lower blood alcohol concentrations<sup>46</sup>.

While moderate consumption of beer can provide many essential vitamins and minerals<sup>47</sup> it is important to remember that no single source can provide the full range of elements essential for life so beer must always be consumed in moderation as part of a balanced diet.





Potential benefits  
from the **natural** ingredients  
in beer

*'Vitamins and antioxidants could also be protective'.*



Scientists who have studied the reduced risk of coronary heart disease in beer drinkers report that the reduction in risk is greater than would be expected from the alcohol alone and speculate that other factors in beer such as vitamins and antioxidants could also be protective<sup>48</sup>.

Research which has looked at the properties of alcohol-free beer indicates that the potential beneficial effects from the natural ingredients are likely to apply equally to this type of beer<sup>49</sup>.

Beer is also a source of soluble fibre which is derived from the cell walls of barley. Two glasses of beer contains an average of 10 per cent of the recommended daily intake of soluble fibre and some beers can provide up to 30 per cent<sup>50</sup>. Other than keeping you regular, fibre has a further benefit by slowing down the digestion and absorption of food and reducing cholesterol levels which may help to reduce the risk of heart disease<sup>51</sup>.

Some research has shown that people who drink beer moderately have a degree of protection from the bacterium *Helicobacter pylori*<sup>52</sup> which is known to cause the majority of stomach ulcers and may be a risk factor for stomach cancer. Beer (and wine) consumption is thought to facilitate eradication of the organism possibly due to an antibacterial effect.

- **Antioxidants.**

Natural antioxidants are found in fruits, vegetables and cereals. They are present in beer, where they come from both the malt (barley) and hops as ingredients<sup>53</sup>. The total amount of antioxidants in beer will depend on the style of beer and therefore the raw materials and the brewing process used.

Per drink (of equivalent alcohol content), beer contains more than twice as many antioxidants as white wine, although only half the amount in red wine<sup>54</sup>. However, many of the antioxidants in red wine are large molecules and may be less readily absorbed by the body than the smaller molecules found in beer. Research has shown that the antioxidant content of blood is raised following beer consumption suggesting that the antioxidants in beer are readily absorbed<sup>55</sup> and perhaps more readily than that from solid foods<sup>49</sup>. Researchers working on animals have suggested a direct effect of antioxidants in beer reducing the risk of cardiovascular disease<sup>56</sup>.

The health significance of antioxidants is that they may play a role in the protection against cancer through their action against free radicals<sup>57</sup>. They are also thought to reduce the risk of heart attacks by inhibiting blood clotting<sup>58</sup>. Thus the anti-oxidants in beer may have a positive health effect on the consumer.

- **Vitamins.**

Like bread, which is also made from cereal, beer is a good source of many vitamins which are essential for life. To make beer the barley is sprouted first (malted) which actually increases the nutritional value of the cereals used. Beer is particularly rich in most of the B type vitamins for example niacin, riboflavin (B2), pyridoxine (B6) folate (B9) and Cobalamin (B12). For those vegetarians who enjoy drinking beer this is a natural source of B12. (Table 1 shows the percentage of the recommended daily intake of certain vitamins and minerals found in half a litre of beer.)

As well as adding to a healthy diet, the vitamins and minerals in beer may confer additional health benefits. Recent research suggests that the B vitamins (B6, B9 and B12) may give beer drinkers additional protection against cardiovascular disease compared to drinkers of wine or spirits<sup>59</sup>. Population studies in USA, UK, France, Spain and the Czech Republic all confirm that moderate beer consumption, in contrast to other alcoholic drinks, reduces homocysteine levels and suggest that this may be due to beer's high B vitamin content<sup>60,61,62,63,64</sup>. High homocysteine levels, like "bad cholesterol" (LDL), are associated with a higher risk of heart attacks. Clinical research is underway to examine whether the folate in beer can reduce homocysteine levels.

- **Minerals.**

Beer has a favourable balance of some essential minerals. It is relatively high in potassium and low in sodium<sup>60</sup>. It is low in calcium and is rich in magnesium which may help to protect against gall stones and kidney stone formation. This may be one reason why daily consumption of a glass of beer was reported to reduce the risk of kidney stones<sup>65</sup>; of course the increased intake of water may also play a part here.

Moderate alcohol consumption is associated with higher bone mineral density (see page 17) but few studies have looked specifically at the effect of different drinks. Silicon intake is associated with healthy bones<sup>66</sup> and has been shown in laboratory experiments to improve several aspects of human bone formation<sup>67</sup> and

increase bone mineral density in animals when taken orally<sup>68</sup>. It has also been shown to improve bone mineral density in women given dietary silicon supplements<sup>69</sup>.

Beer is a rich source of dietary silicon which is readily absorbed by the body<sup>70</sup> and has been shown to be the major contributor of silicon in men's diet<sup>71</sup>. This silicon comes from two natural sources - water and barley<sup>72</sup>. Research is underway which will investigate whether the dietary silicon provided by moderate beer consumption actually protects against osteoporosis. This may explain in part the protective effect described above.

• *Table 1: Some vitamins and minerals in beer.*

Vitamin	Average contents per half litre of beer*	% of recommended daily intake per half litre of beer**
B12 Cobalamin	0.9 micrograms	50
B2 Riboflavin	150 micrograms	8
B6 Pyridoxine	150 micrograms	8
Biotin	2.5 micrograms	8
Niacin	1.5 mg	7
B9 Folate	20 – 60 micrograms	5 - 22
Pantothenic Acid	500 micrograms	4
Mineral	Average contents per half litre of beer*	% daily intake per half litre of beer**
Magnesium	50 mg	12
Potassium	200 mg	12
Silicon	10 mg	-

\*Amount in an average (typical) beer    \*\*Recommended levels vary across Europe  
 Source: McCance and Widdowson's "The composition of Foods".

• Hops.

Small quantities of the "flowers" from hops are used to preserve and flavour beer. Beer is the only significant dietary source of hops so any potential health benefits they have are unique to beer. Many studies have shown that the flavonoids in hops, have the potential to protect against some diseases and help fight some types of cancer<sup>74</sup>. Most of this research has been done in the laboratory but additional research is planned to investigate the potential effects in animals and people<sup>75</sup>.

Hop flavonoids are present in beer<sup>76</sup> but as yet their effect on human health is not fully understood.

A man with glasses and a blue checkered shirt is pouring beer from a brass tap into a glass. The tap has two signs: one with a polar bear and the text 'Polar Bear' and another with a man's face and the text 'Max's Big Head Brew'. The background is dark and out of focus.

# The problem of obesity beer is **not** to blame

*'Until recently it has been assumed that consumption of alcoholic drinks has been adding to the cause of the obesity epidemic but this has now been shown to be unjust'.*



*The prevalence of obesity in the EU has trebled in the last 20 years. In 2001 15-25 per cent of men and women were clinically obese (Body Mass Index (BMI) >30 kg/m<sup>2</sup>) and a further 50 per cent were overweight (BMI 25-30 kg/m<sup>2</sup>). If these trends continue 30 per cent of the adult population will be obese by 2010.*

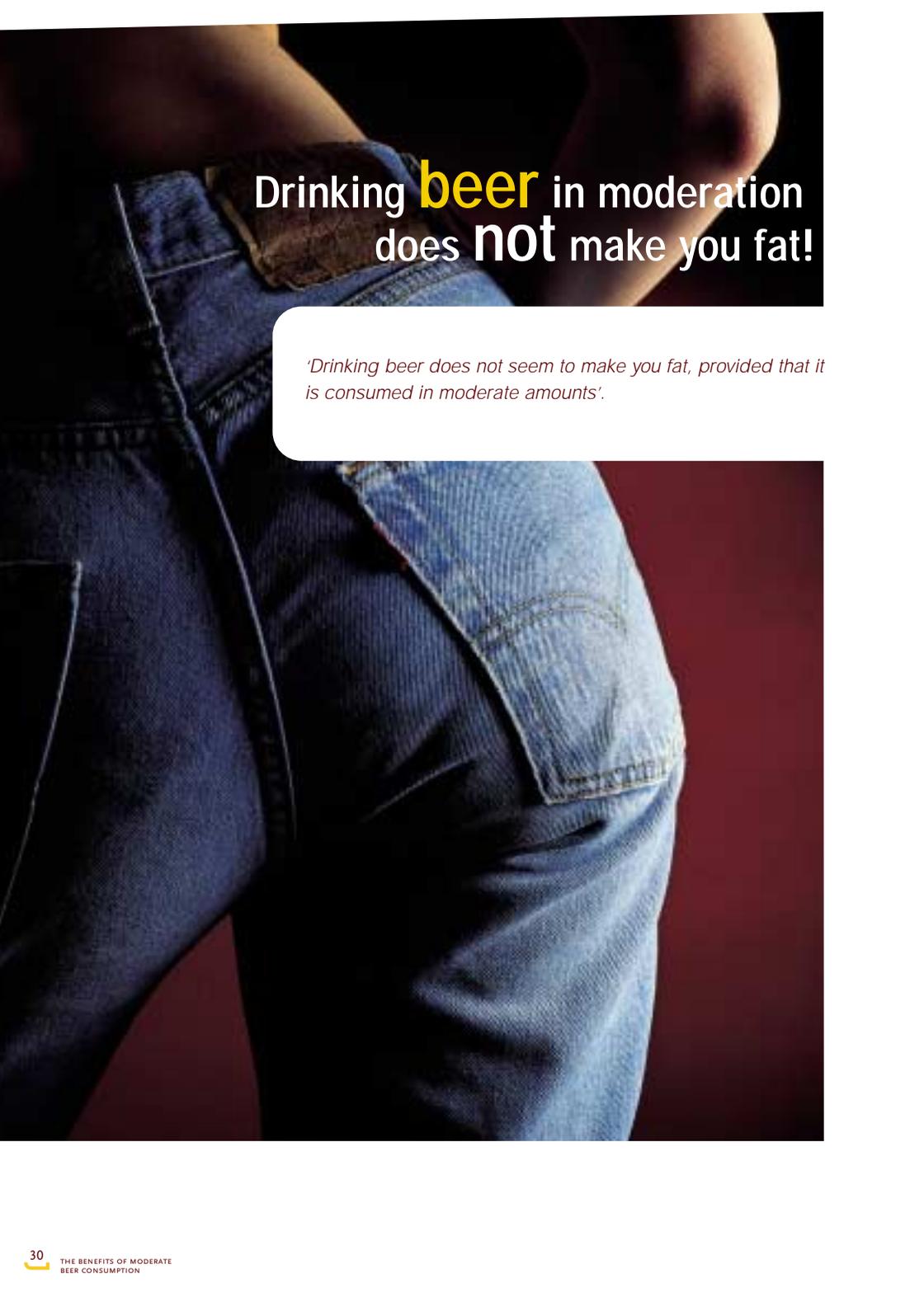
Obesity is a significant health problem because it is associated with many other types of ill health including type II diabetes, cardiovascular disease and liver cirrhosis and is thought to reduce overall life expectancy by approximately 10 years. It is strongly influenced by lifestyle and many factors can account for a change in body weight such as smoking, calorie intake, fat intake, activity level and socio-economic status.

Until recently it has been assumed that consumption of alcoholic drinks, and beer in particular, has been adding to the cause of the obesity epidemic but this has now been shown to be unjust where moderate consumption is concerned. (Heavy consumption is associated with increased weight and several studies have indicated this<sup>77</sup>.)

Moderate alcohol consumption (10 – 30g per day) represents about 10 per cent of total energy intake in developed countries. Despite these “additional” calories several recent studies have confirmed that moderate consumption of alcoholic drinks does not lead to increased weight in men and is associated with reduced weight in women<sup>78,79,80,81</sup>. The reason for this continues to be a matter of debate<sup>82</sup>. One possible reason is that consuming alcoholic drinks with meals may stimulate energy expenditure<sup>83</sup> but it is difficult to recognise and statistically account for all the lifestyle factors such as level of physical activity and it is probable that several factors are involved.

One study tested the effect of wine, beer and soft drink served with a normal meal, on food and total energy intake in non obese men<sup>84</sup>. The conclusion was that alcoholic beverages, and wine in particular, may enhance total energy intake at a meal relative to a soft drink when served ad libitum.

The way in which people consume alcohol also influences weight and drinkers who consume small amounts of alcohol on a regular basis (daily) were shown to be slimmer than those who only binge occasionally<sup>85</sup>.



Drinking **beer** in moderation  
does **not** make you fat!

*'Drinking beer does not seem to make you fat, provided that it is consumed in moderate amounts'.*



Beer does not contain fat or cholesterol and is low in free sugars. The calories in beer come largely from the alcohol content. Beer is lower in calories than other drinks but tends to be drunk in larger quantities (see Table 2).

The term “beer belly” is associated with obesity in beer drinkers in several parts of Europe but this may not be due to the beer but to other characteristics of beer drinkers. Several studies have shown a link between beer consumption and poor dietary choices<sup>86,23</sup> and it may be that the “beer belly” results from consumption of food high in calories and rich in fats (see table below).

One recent study set out specifically to test the notion that “beer drinkers are on average, more obese than either non drinkers or drinkers of wine or spirits” and concluded that it is unlikely that beer intake is associated with measures of obesity such as body mass index (BMI) or waist hip ratio (WHR)<sup>87</sup>. This study also showed that in women moderate beer consumption was associated with a lower BMI.

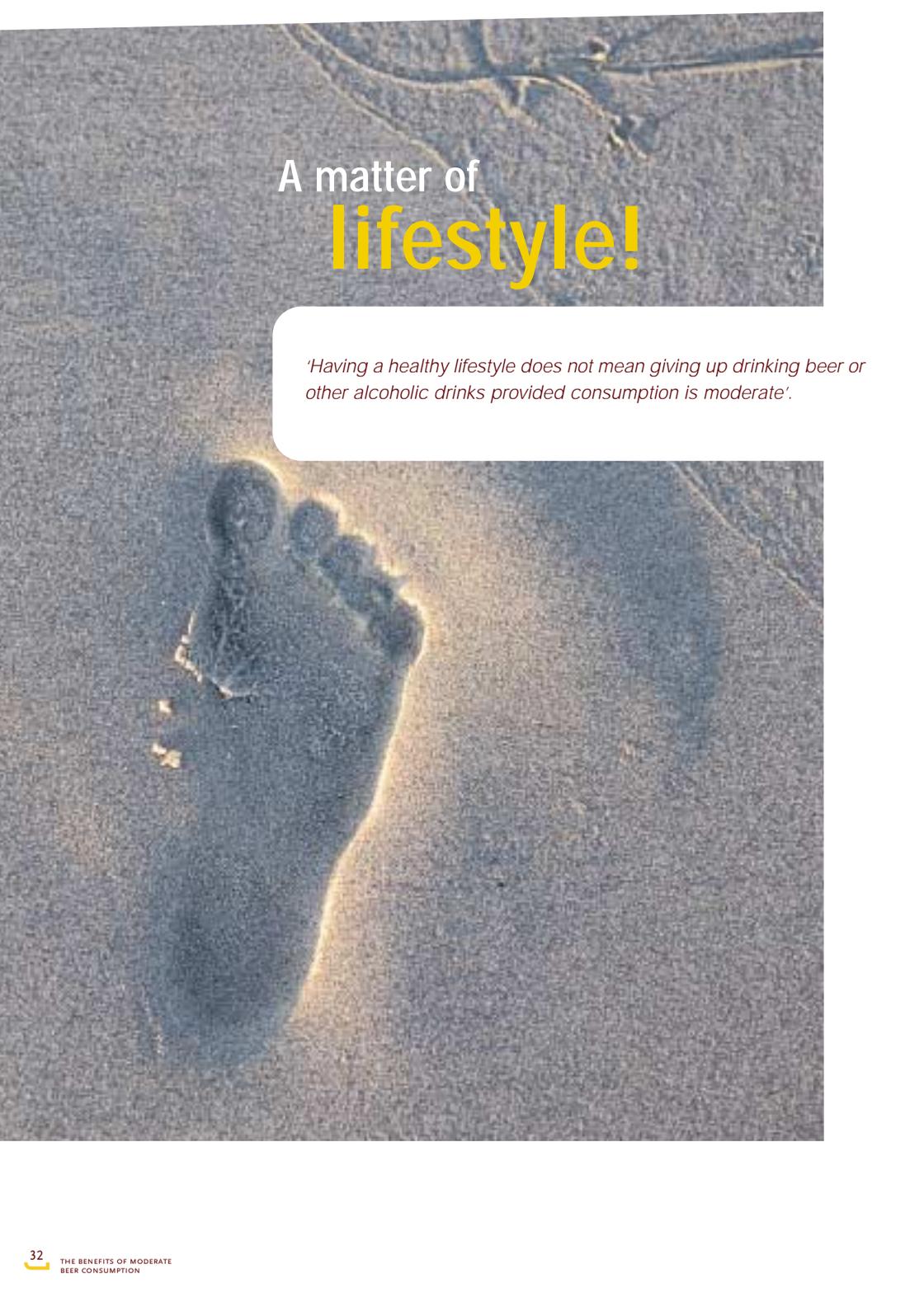
*• Table 2: Approximate calorie content in beer and other drinks and in foods often eaten with beer.*

Beverages	Calories per 100 ml	Standard serving ml*	Calories per standard serving
Beer-lager (4.6% abv)	41	250	107
Beer (non-alcoholic)**	15	250	38
Table wine (12% abv)	77	150	115
Spirits (40% abv)	250	25	62
Liqueurs (40% abv)	320	25	80
Milk (whole)	64	244	156
Regular Cola/soda	42	370	155
Apple juice (unsweetened)	47	263	123
Orange juice (unsweetened)	42	263	110
Tomato juice	17	242	53
Food	Calories per 100g	Standard serving g*	Calories per standard serving
Crisps	500	50	250
Nuts (salted/roasted)	600	50	300
Hamburger (regular)	250	110	275
Hamburger (large)	309	176	543
Pizza (medium)	270	150	420
Potato Fries	342	134	458
Sausage sandwich	300	60	170
Bagel	240	140	350
	275	100	375

\*The size of standard servings varies across Europe

\*\*Not listed on USDA site

Source: [www.nal.usda.gov/fnic](http://www.nal.usda.gov/fnic)



# A matter of lifestyle!

*'Having a healthy lifestyle does not mean giving up drinking beer or other alcoholic drinks provided consumption is moderate'.*



The growth in noncommunicable diseases is a major health burden in industrialised countries and research has shown that these illnesses have their roots in unhealthy lifestyles<sup>88</sup>.

One of the key messages referred to by all the speakers at the third Beer and Health Symposium was the importance of lifestyle and the fact that good health is affected by everything we do, including eating a balanced diet, exercising regularly, drinking moderately and giving up smoking.

Life expectancy is increasing and, as a result, conditions such as obesity, diabetes, dementia and osteoporosis are becoming more prevalent in society causing an increasing economic burden on health services and decreasing the quality of life. Consequently research is focussing on risk factors and strategies to prevent such conditions, including lifestyle and dietary factors. Drinking beer in moderation provides refreshment, and enjoyment so it is reassuring for those who do consume beer regularly to know that it can also be a part of a healthy lifestyle.

Another key message from the symposium was that the health benefits described are the result of light to moderate consumption and the effects on health are quite the opposite when consumption levels rise. It is important therefore that information about possible health benefits associated with moderate consumption of alcoholic drinks are not used to encourage consumption of beer or other drinks as a means of promoting health or longer life.

The speakers agreed that the message is complicated. It was clear that it is important to encourage more healthy lifestyles and that heavy consumers should be encouraged to moderate their consumption but the difficulty in defining what moderate or binge drinking really means adds to the confusion. The medical profession is understandably reluctant to advocate moderate drinking to abstainers in order to gain the associated health benefits because of the fear that this might lead to over indulgence or be interpreted as an excuse for some people to drink too much. On an individual basis general practitioners will be able to assess their patient's risk more precisely but the evidence seems to indicate that a healthy lifestyle does not mean giving up drinking beer or other alcoholic drinks provided consumption is moderate.

The research described in this leaflet sums up the current state of knowledge on this subject. More studies are underway to examine whether some of the potentially beneficial components of foods and beverages such as beer, can be used by the body for the prevention of disease.

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