

This entry is our account of a review or synthesis of research findings selected by Drug and Alcohol Findings as particularly relevant to improving outcomes from drug or alcohol interventions in the UK. Unless indicated otherwise, permission is given to distribute this entry or incorporate passages in other documents as long as the source is acknowledged including the web address <http://findings.org.uk>. The original review was not published by Findings; click on the [Title](#) to obtain copies. Free reprints may also be available from the authors – click [prepared e-mail](#) to adapt the pre-prepared e-mail message or compose your own message. Links to source documents are in [blue](#). Hover mouse over [orange](#) text for explanatory notes. The Summary is intended to convey the findings and views expressed in the review. Below are some comments from Drug and Alcohol Findings.

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► [The effectiveness of tax policy interventions for reducing excessive alcohol consumption and related harms.](#)

Elder R.W., Lawrence B., Ferguson A. et al.

American Journal of Preventive Medicine: 2010, 38(2), p. 217–229.

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The review which led a national US task force to recommend alcohol tax rises as an important public health measure to curb excessive alcohol use and related harms. US and UK politicians remain wary for reasons which can't just be dismissed as populism.

Summary This systematic review of alcohol tax policy interventions for reducing excessive alcohol consumption and related harms was conducted for the [Guide to Community Preventive Services](#) according to the Guide's rigorous common template. The Guide is maintained by the US government's Centers for Disease Control and Prevention, which appoints a task force of independent public health and prevention experts to oversee the reviews and make recommendations ([these](#) are the ones based on the featured review) to promote the health of the US population based not just on effectiveness, but also other potential benefits and harms and real-world applicability.

Given evidence that alcohol taxes feed through to retail prices, the review included studies not just of tax levels, but also the impact of price, with the proviso that the study was of an acceptable quality, published in English, and conducted in a high-income economy. 73 research papers met the review's criteria. Most related prices or taxes to a society's total alcohol consumption; on the basis of clearly established links between consumption, excessive drinking, and harmful consequences, these studies were considered relevant to the review's remit. Remaining studies assessed relationships with excessive or underage drinking or alcohol-related harm, most commonly traffic accidents. Some studies were of tax/price rises, others of cuts, and others still of different levels in different jurisdictions. Regardless of the design of the study, nearly all found that higher alcohol taxes or prices were associated with falls in indices of excessive drinking or alcohol-related illness or injury. Details below.

Of the 50 studies relating price to overall consumption, 38 calculated price [elasticities](#). Nearly all the 38 studies found negative elasticities, indicating that higher prices were associated with lower per-capita consumption. In both the USA (-0.63) and elsewhere (-0.68), the typical elasticity meant that as price rose by a given %, consumption fell by about two-thirds as much. In another 12 studies, elasticities could not be calculated, but generally higher prices were associated with lower consumption.

Another 16 studies used survey data on how much individuals said they drank. Most included young respondents often underage for drinking, and all but two were conducted in the USA. Generally higher prices or taxes were associated with a lower prevalence of youth drinking, though only four out of nine studies found at least some statistically significant results. Among adults and the general population too, tax and price rises were associated with a lower rate of heavy drinking (usually typified as 'binge' drinking) and related harms. There were some indications that impacts were greatest among population groups who drink most often to excess, such as young men.

Half the 22 studies of alcohol-related harm concerned motor-vehicle crashes and/or consequent fatalities. Generally these found significant falls as tax or price rose, impacts [comparable](#) to those on alcohol consumption. Liver cirrhosis was the other main cause of death investigated. All five studies found higher prices associated with fewer deaths, though impacts varied considerably. Some other causes of death were also estimated to fall. The three studies which looked at this found higher alcohol taxes were associated with decreased violence – and specifically violence to children – to a degree comparable to impacts on alcohol consumption, while two found higher prices curbed the spread of sexually transmitted diseases.

Consistency across high-income economies in North America, Europe, and the Western Pacific suggest that in such economies the link between overall alcohol consumption in a society and tax/price is broadly applicable. Findings on alcohol-related harms derive primarily from North America but are likely to be broadly applicable across high-income countries. Sectors of the population with least disposable income would be expected to be most sensitive to price, but the review was unable to test this expectation. It was also unclear whether heavier drinkers are more or less sensitive than lighter drinkers.

According to the World Health Organization, tax rises are the most effective and cost-effective measure to reduce alcohol-related harm when at least 1 in 20 of the population is a heavy drinker, and a US analysis found net costs savings for society due to the injury prevention impact of a 20% tax rate.

The review noted that while raising alcohol taxes provides government revenue, it may be resisted by the alcohol industry and consumers; public support increases when revenues are devoted to alcohol prevention and treatment. It acknowledged equity concerns that higher alcohol taxes may have the greatest economic impact on poorer people, but argued that: in the USA these taxes would still constitute a very small part of the tax burden; inequality could be redressed elsewhere in the tax and benefits system (such as in the availability of healthcare services for uninsured and other vulnerable populations); and poorer citizens can be expected to benefit most in health terms from reductions in excessive alcohol consumption.

The reviewers concluded that these results constitute strong evidence that raising alcohol taxes is an effective strategy for reducing excessive alcohol consumption and related harms. The impact is expected to be proportional to the size of the consequent price rise. For example, a 10% increase in alcohol prices has typically resulted in a 3% to 10% fall in consumption. Impacts will probably also depend on factors such as disposable income and the demand elasticity for alcohol among different population groups.

FINDINGS As the review comments, the proposition that as alcohol price rises, consumption falls, is one of the most well established in the alcohol use prevention armoury, and plausibly in line with general economic theory and data about the response of demand to price. Given its findings, the Task Force on Community Preventive Services [recommended](#) "increasing taxes on the sale of alcoholic beverages".

Convincing as it was, the review did not always clearly separate tax from price; tax obviously influences price but in complex ways which mean that a general rise in tax will not lead to the same proportionate rise in prices across different types of drink sold under different licensing conditions. Especially when it comes to the harms from a given amount of drinking, the assumption that primarily North American studies are an adequate guide to expected impacts in other drinking cultures is open to question. Even [within Europe](#), a given consumption change has impacts which differ greatly across nations. Another general gap in the analysis was that it was unable to explicitly account for the potential impact of drinkers switching to other beverages if one type of drink increases in price.

[Switching drinks can undermine tax rise impacts](#)

If drinkers switch drinks, price rises may substantially curb consumption of the now more expensive drink, yet the impact on overall alcohol consumption will be less. If the elasticity for alcohol as a whole is estimated from the elasticities for each beverage, the result will be to overestimate the impact of price and tax rises. Adjusting for product switching is however complex; details below.

UK data ([1](#) [2](#)) shows that often pairs of beverages substitute for one another, but sometimes the opposite happens; as consumption of one falls or rises in response to its price, so does consumption of the other. But overall a major [meta-analytic](#) synthesis of relevant studies [found that](#) taking in to account the prices of other

beverages significantly weakened the link between price and consumption of any given beverage. This analysis argued that "interdependencies in demand across alcohol beverages" should be taken into account in making decisions on tax. Some of the studies incorporated in the featured review (for example, [one](#) which contributed six of the 38 elasticity estimates) did not take account of price competition between different beverages, somewhat weakening confidence in the review's conclusions about the impacts of price (and therefore tax) on overall consumption. Another [major meta-analysis](#) found that across all the studies which gave a figure for alcohol consumption as a whole (therefore taking into account any switching), elasticity averaged -0.51, indicating that as price levels rise, consumption falls by about half as much. Heavy drinking was cut too but less so than drinking overall.

Some tax or price policies are designed to limit the ability of consumers to switch to products which offer more alcohol for less money. Among these is 'volumetric taxation' – setting tax levels solely on the basis of alcohol content and uniformly across all types of drinks. In the Australian context this [was estimated](#) to cost just \$0.58 million but to save \$57 million in health costs due to reduced drinking, leading to a net cost saving of \$56 million Australian dollars, about £28 million. Despite costing less than current policies, it would also avert the loss of an extra 11,000 years of life adjusted for disability, making it the most cost-effective and cost-beneficial of the tested interventions. This analysis does [seem to have](#) accounted for price competition between different types of drink.

Switching was also accounted for in a [mathematical model](#) based on English data. Price rises applied across all products in the on- and off-trade [were estimated](#) to substantially reduce average consumption, partly due to limited switching between drinks because price increased across the board, and partly because all consumer groups are targeted equally. Raising the price only of low-priced products led to much smaller falls in consumption (for example, under 0.5% for a 10% rise compared to over 4% if this were applied to all drinks) because limited market segments are affected, and there would be some switching between drinks. Alcohol-related harms were estimated to fall along with overall consumption.

Minimum price per unit now UK policy

Another proposal which avoids switching is to set a minimum price per unit of alcohol across all types of beverages. The mathematical model mentioned above was used [to estimate](#) that a minimum price of £0.40 would curb consumption by 5.4%, most notably among heavier drinkers, and save a life a day by the tenth year of the policy, when hospitals would be relieved of nearly 6300 alcohol-related admissions a year. It would also cut crime, absence from work, and loss of employment, totalling nearly £950 million social cost savings at a cost to the Treasury of around £120 million.

Given the broad agreement among studies and reviewers, [the major questions](#) are not over the validity of the findings, but over whether governments mindful of the opinions of the drinking public and the importance of drink-related industries will raise alcohol taxes/prices sufficiently to realise the potential public health gains. This is especially the case in Britain, which [compared to other European nations](#) already has among the highest alcohol taxes, and where drink prices are relatively high compared to other commodities. After government resistance in England and Wales and initial parliamentary rejection in Scotland, now across most of the UK setting a minimum price per unit is government policy and in the case of Scotland has been provided for in law, though nowhere has it yet been implemented. Details below.

In 2009 the UK House of Commons Health Committee [advocated](#) a minimum per unit price allied with duty increases on high-alcohol products. At the time no UK-wide political party potentially in a position to implement such policies was planning across the board tax rises or minimum pricing. In opposition, Conservative party [plans](#) were to raise alcohol taxes, but only on high-strength beers and ciders and drinks preferred by teenagers, an option similar to that [estimated](#) to have very minor effects on overall consumption, but one which might alienate few adult voters. In government with the Liberal party, policy changed with the release of the 2012 [national alcohol strategy](#) for England and Wales. This included a commitment to rapidly set a uniform minimum price per unit for alcohol across all drinks, the [level](#) of which will be subject to a consultation which [was announced](#) in November 2012.

Scotland, where drink problems are the most severe of the UK nations, moved considerably earlier than the rest of the UK to implement price rises in the form of a minimum per unit price, though at the time of writing the plans have yet to be implemented. As long ago as 2009 Scotland's [national alcohol strategy](#) committed the government to a minimum price per unit of alcohol and included plans to ban the sale of alcohol as a loss-leader. These plans faced [challenges](#) from within the Scottish parliament, which in November 2010 [rejected](#) the minimum pricing element of the Scottish National Party's Alcohol Bill. Following the May 2011 elections which left the Scottish National Party with an overall majority in the parliament, [another attempt](#) was made in the form of the Alcohol (Minimum Pricing) Bill placed before the Scottish parliament in October 2011 which was [later passed](#) and in June 2012 became the Alcohol (Minimum Pricing) Scotland Act 2012. This enables the government to issue regulations setting a minimum unit price, which government says it intends to set at &#pound;0.50. Unless after five to six years renewed by government subject to parliamentary approval and on the basis of a report on its impacts, this provision will automatically be withdrawn. It [remains possible](#) that opponents will use UK devolution and/or European Union free trade laws to obstruct this provision.

Public and politicians ambivalent over expensive drink

The stuttering and in some political quarters reluctant progress to accepting a minimum unit price in the UK illustrates the difficulty democratic administrations face in imposing expensive drink on majority-drinking populations and also in facing up to the power of sections of the alcohol industry opposed to such plans. In the USA too, public health has in practice not been the overriding consideration. Given the evidence that tax rises would raise revenue and cut public service costs, in 2009, 25 cash-strapped US states [sought to increase alcohol taxes](#). Despite a trend to appease public and political opinion by planning to divert new revenue to address alcohol-related harm, just six succeeded in getting the bills passed by their legislatures, reportedly defeated by alcohol-industry lobbying.

One reason why public and politicians may remain unconvinced is that studies concerned primarily with harm fail to account for the *benefits* drinkers feel they get (the reason why they are prepared to pay) from drinking. Sometimes studies do account for the minor (relative to the overall harms) medical benefits of low-level regular consumption, but these are not why most drinkers drink. An industry-funded [review](#) found research indicating that moderate drinkers "experience a sense of psychological, physical, and social well-being; elevated mood; reduced stress (under some circumstances); reduced psychopathology, particularly depression; enhanced sociability and social participation; and higher incomes and less work absence or disability", benefits which have "barely begun to be incorporated into epidemiologic research and analyses." Against this it can be argued that neither do studies account for all the negatives related to drinking such as family break-up, low-level abuse, and family and personal distress.

Neglect of benefits from drinking was one of the [criticisms](#) made by a prominent alcohol expert and sociologist of attempts to establish a total cost (or cost reduction due to policy changes) to society of alcohol-related harm. He argued that though the constituents such as lives saved, crimes not committed, and illnesses avoided, may in themselves be a good enough reason to curtail the availability of alcohol, amalgamating these 'apples and pears' and attaching a monetary value to them is such a value-laden and imprecise exercise that it is of propaganda value only in determining policy. The British exercises in particular were dominated by productivity gains due to less drink-related unemployment, calculations which, the critic reasoned, unrealistically assumed no countervailing benefits. Yet in the absence of full employment, vacancies left by drinkers will usually be filled by someone else, ending perhaps via a chain of job changes in someone currently unemployed gaining a job.

Neither can the equity arguments which weigh with some politicians be dismissed. Faced with price rises, drinkers do not generally cut back enough to avoid spending more. Minimum pricing or alcohol-content taxation would reduce or eliminate the option of switching to cheaper drinks. The impact of a greater proportion of the family budget being diverted to drinking is likely to be felt most sharply among the poorest. The featured review and others argue that this aggravation of inequality could be redressed by selective use of the tax revenues, and that the poorest may also gain most in health. However, these potential and/or future mitigations are set against an almost certain and immediate impact on the emptiest pockets.

Thanks for their comments on this entry in draft to Randy Elder of the US Guide to Community Preventive Services, Petra Meier of the University of Sheffield and Peter Anderson of Maastricht University. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

Last revised 28 November 2012. First uploaded 22 January 2010

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