

## Mixed messages



### Alcohol and energy drinks

#### Introduction

Sales of high-caffeine energy drinks have increased substantially in the UK in recent years, with such drinks being particularly popular amongst young people. Alongside this, there has developed a trend for combining energy drinks with alcohol, either in the form of premixed alcoholic drinks or by mixing non-alcoholic energy drinks with spirits. Strong concerns have been expressed about the possible dangers to health of consuming large doses of caffeine together with alcohol. This briefing paper summarises the evidence available so far and makes recommendations for action.

#### What are energy drinks?

Energy drinks are sweet (usually carbonated) drinks intended to give the consumer a short term energy boost, most commonly by means of a combination of caffeine and sugar. They typically contain 30-32mg of caffeine per 100ml, meaning that a 500ml can contains around 160mg of caffeine. Some are also sold in highly concentrated shots containing up to 133mg of caffeine per 100ml (see table below). In comparison, 100ml of Coca Cola contains 9.6mg of caffeine,<sup>1</sup> and a single espresso coffee contains around 75mg of caffeine.<sup>2</sup> On this basis, the caffeine content of a 500ml can of an average energy drink is roughly equivalent to a double espresso or five cans of Coke.

### Caffeine, sugar and alcohol content of some common energy drinks<sup>3</sup>

Drink	Can/bottle size	Caffeine content	Sugar content	Alcohol content
Red Bull	250ml, 355ml and 473ml	32mg/100ml (80mg per 250ml can)	11g/100ml (28g per 250ml can)	0%
Red Bull Sugar Free	250ml	32mg/100ml (80mg per can)	0g	0%
Red Bull Energy Shot	60ml	133mg/100ml (80mg per shot)	6g per shot	0%
Red Bull Sugar Free Shot	60ml	133mg/100ml (80mg per shot)	0g	0%
Monster Energy	500ml	32mg/100ml (160mg per can)	11g per 100ml (55g per can)	0%
Relentless Origin	500ml	32mg/100ml (160mg per can)	10g per 100ml (52g per can)	0%
Rockstar Energy Drink	500ml	32mg/100ml (160mg per can)	13g per 100ml (65g per can)	0%
Energy Vodka Hell	300ml	Not listed	Not listed	5%
Red Square Reloaded	700ml	24mg/100ml (168mg per bottle)	Not listed	4%

All figures rounded up or down to the nearest whole unit.



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#### Arguments about the alleged benefits of energy drinks

Energy drinks are often marketed on the basis of health enhancing properties. The manufacturers of Red Bull state that their drink “increases concentration and reaction speed” and “improves your overall well-being”.<sup>4</sup> Relentless is said to “give you the stamina, focus and drive you need, when you need it”.<sup>5</sup> Conversely, researchers at Miami University concluded earlier this year that “energy drinks have no therapeutic benefit, and many ingredients are understudied and not regulated”.<sup>6</sup> Similarly, whilst energy drinks are specifically promoted to athletes, the body regulating high school sports in the USA referred in 2008 to the “the absence of benefit and the presence of potential risk associated with energy drinks”.<sup>7</sup>

#### Sales of energy drinks

Since Red Bull first appeared on the European market in 1987, sales of energy drinks have increased rapidly. In 2009, independent analysts Mintel found that sales of sports and energy drinks in the UK were set to rise to £1 billion during that year, with Britons consuming an estimated 525 million litres of these drinks. Mintel also predicted that sales of sports and energy drinks would increase further to £1.5 billion (or 757 million litres) by 2014.<sup>8</sup> During 2010, 4.2 billion cans of Red Bull were sold worldwide, in 161 countries. Within these global sales, the USA and Western Europe are regarded as core markets for energy drinks.<sup>9</sup>

#### Marketing to young people

Sales of energy drinks are particularly high amongst young people,<sup>10</sup> and their branding, packaging and marketing very much reflects

this demographic. Cans of the various Relentless brands use imagery redolent of fighting-fantasy games and heavy metal music,<sup>11</sup> whilst Rockstar Energy Drinks promote a number of alternative sports and rap and rock performers.<sup>12</sup> Similarly, Red Square Reloaded – a widely available alcoholic energy drink – uses images of a gritty urban landscape and graffiti-style graphics on its bottles, drawing on the iconography of the urban rap scene.<sup>13</sup> Producers Halewood International clearly state that Red Square Reloaded is specifically aimed at the youngest end of the legal drinking market.<sup>14</sup>

The strong appeal of energy drinks to young people and the targeting of young consumers by the producers of such drinks raise number of questions:

- Do non-alcoholic energy drinks provide too easy a stepping stone for young people to the use (and misuse) of alcohol, especially if they are aware that their favourite caffeinated soft drink is also widely used as a mixer for alcohol?
- Will young consumers who are familiar with a particular non-alcoholic energy drink move more easily to its alcoholic equivalent, e.g. from Red Alert to Red Square Reloaded? Concerns of this nature led in 2007 to the withdrawal from the American market of Rockstar 21, an alcoholic energy drink felt to be too similar in taste and appearance to the Rockstar company’s non-alcoholic energy drinks.<sup>15</sup>
- Given that alcoholic energy drinks are often sweet in taste, will they appeal more to younger drinkers who are not attracted by more traditional beers and wines?

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#### Mixing energy drinks with alcohol

The small number of premixed alcoholic energy drinks on sale in the UK typically contain 4- 5% alcohol.<sup>16</sup> Alongside this is the common practice of mixing non-alcoholic caffeine drinks with alcohol, with the resultant alcohol content being potentially much higher. Popular versions of this include the JägerBomb, in which a shot of Jägermeister liqueur (35% alcohol) is dropped into a glass of Red Bull. The Flares chain of bars offers JägerBombs and JägerBulls, as well as TVR – a “supercharged mix” of tequila, vodka and Red Bull<sup>17</sup> – whilst Revolution bars sell pitchers of Absolut Chambulls, containing Red Bull and sparkling pear wine along with “at least 6 shots” of vodka.<sup>18</sup>

The Red Bull company use imagery of their product being mixed with vodka on their website, suggesting that the company is entirely comfortable with the widespread use of its product as a mixer for alcohol.<sup>19</sup> Similarly, the Jägermeister distillery publish recipes for mixing their product with energy drinks, including the Flying Deer made from Jägermeister, vodka, white wine and Red Bull.<sup>20</sup> Halewood International describe their non-alcoholic Red Alert energy drink as “the perfect mixer for Red Square Vodka”, stating that “Red Alert remains a key drive line within the Red Square stable”.<sup>21</sup>

#### Concerns about energy drinks and alcohol

An increasing body of evidence exists on the possible dangers of mixing energy drinks with alcohol. Whilst alcohol is a depressant, caffeine is a stimulant, and a number of studies have shown that consuming energy drinks with alcohol may make drinkers feel more alert, although this does not make them any less drunk. One possible result of this is that

drinkers will take more risks, since they are less aware of how drunk they actually are.<sup>22 23</sup> The caffeine in energy drinks may also mean that drinkers stay awake longer, and so drink more. In effect, high-caffeine drinks may remove the natural brake that the sedative effect of alcohol can put on an evening’s drinking.

*“Having maximum fun at a long lasting club session or a house party requires robust physical endurance. That’s why a whole generation swears by the boost of Red Bull to fly through the night.”*

Red Bull website, 2011<sup>24</sup>

These dangers have been highlighted in two recent studies from the USA:

- A University of Florida survey of students in 2009 found that those who had drunk alcohol mixed with energy drinks were three times more likely to leave a bar very drunk, and four times more likely to intend to drive, compared with drinkers who had ordinary alcoholic drinks.<sup>25</sup>
- A similar survey of students in North Carolina in 2006 found that those who mixed alcohol and energy drinks were more likely to have an injury, ride with a drunk driver, or have an unwanted sexual experience.<sup>26</sup>

In addition, both caffeine and alcohol are diuretic – they cause the body to pass more urine and so lead to dehydration – and this may be further worsened by the high sugar content of many energy drinks. In the short-term, dehydration can cause nausea, headaches and vomiting. Longer-term, it can lead to problems with organs and joints, as well as sunken eyes and premature ageing of the skin.<sup>27</sup>



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## Recommendations

The issue of alcohol and energy drinks is far from simple, and responses to it in various countries highlight this complexity. Alcoholic drinks made with synthetic caffeine are banned in Canada, although this has left some well-known alcoholic energy drinks on sale.<sup>28</sup> In 2010, the American Food and Drugs Administration ordered four companies to withdraw specific drinks from sale, stating that caffeine added to alcoholic drinks was an “unsafe food additive”.<sup>29</sup> Both countries have, however, stopped short of a comprehensive ban on alcoholic energy drinks. Within the UK, the Scottish Labour Party proposed in 2010 setting a maximum limit of 15mg/100ml for caffeine in alcoholic drinks (compared with 24mg/100ml in Red Square Reloaded)<sup>30</sup> although this was rejected by the Scottish Parliament.<sup>31</sup>

The issue of mixing alcohol with non-alcoholic energy drinks is, perhaps, even more complex since the separate ingredients can be easily bought and mixed by consumers, even if they are not sold or promoted together. Within this context, Alcohol Concern makes the following recommendations for action:

- A comprehensive review is needed of the existing evidence on the effects of consuming alcohol mixed with highly caffeinated drinks. New research should be commissioned to address any gaps in current knowledge, with a view to developing clearer guidance and regulations on the sale and marketing of such drinks. Specifically, research is needed into patterns and trends of consumption of alcohol and energy drinks in the UK, and into whether the consumption of such drinks is linked to increased harm to health and to more risk taking behaviours in this country.

In the meantime:

- Alcohol information and awareness raising campaigns need to ensure that consumers are fully aware of the potential dangers of consuming alcohol with large amounts of caffeine.
- Producers of alcoholic and non-alcoholic energy drinks should actively promote messages about the possible risks of mixing caffeine and alcohol in their marketing campaigns and on-line presence.
- Pubs, clubs and bars should avoid the promotion of high-caffeine energy drinks as a mixer for alcohol.

## References

1. Coca Cola website (2011) <http://www.coca-cola.co.uk/faq/ingredients/how-much-caffeine-is-in-diet-coke-coca-cola-and-coke-zero.html> [accessed 16/05/2011].
2. Starbucks website (2011) <http://assets.starbucks.co.uk/assets/beverage-nutritional-spring-2011.pdf> [accessed 16/05/2011].
3. Information from product packaging, purchased April 2011.
4. Red Bull website (2011) [http://www.redbull.com/cs/Satellite/en\\_INT/red-bull-energy-drink/001242937921959](http://www.redbull.com/cs/Satellite/en_INT/red-bull-energy-drink/001242937921959) [accessed 16/05/2011].
5. Relentless website (2011) <http://www.relentlessenergy.com/products/origin.html> [accessed 16/05/2011].
6. Seifert, S.M. et al (2011) *Health effects of energy drinks on children, adolescents, and young adults*, Pediatrics, Volume 127, Number 3, online, available from: <http://pediatrics.aappublications.org/cgi/content/abstract/peds.2009-3592> [accessed 16/05/2011].

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7. National Federation of State High School Associations (2008) *Position statement and recommendations for the use of energy drinks by young athletes*, Indianapolis, NFHS, online, available from: <http://www.nfhs.org/> [accessed 16/05/2011].
8. Mintel press release (2009) *Is there any limit to the growth potential of sports and energy drinks?*, online, available from: <http://oxygen.mintel.com/sinatra/reports/display/id=394414> [accessed 16/05/2011].
9. Red Bull website (2011) [http://www.redbull.com/cs/Satellite/en\\_INT/company-figures/001242939605518?pcs\\_c=PCS\\_Product&pcs\\_cid=1242937556133](http://www.redbull.com/cs/Satellite/en_INT/company-figures/001242939605518?pcs_c=PCS_Product&pcs_cid=1242937556133) [accessed 16/05/2011]
10. Mintel press release (2010) *Sports and energy drinks – Europe – December 2010*, online, available from: <http://oxygen.mintel.com/sinatra/reports/display/id=490790> [accessed 17/05/2011].
11. Relentless website (2011) <http://www.relentlessenergy.com/products/inferno.html> [accessed 16/05/2011].
12. Rockstar website (2011) <http://www.rockstarenergy.co.uk/> [accessed 16/05/2011].
13. Information from product packaging, purchased April 2011.
14. Halewood International website (2011) <http://www.halewood-int.com/home/brands/red-square-reloaded-ice> [accessed 17/05/2011].
15. Marin Institute (2007) *Alcohol, energy drinks and youth: a dangerous mix*, San Rafael, Marin Institute, online, available from: [http://www.marininstitute.org/alcopops/energy\\_drink\\_report.htm](http://www.marininstitute.org/alcopops/energy_drink_report.htm) [accessed 17/05/2011].
16. Information from product packaging of Energy Vodka Hell and Red Square Reloaded, purchased April 2011.
17. Flares website (2011) [http://www.flaresbars.co.uk/flarescardiff/pdf/flarescardiff-drinks\\_menu.pdf](http://www.flaresbars.co.uk/flarescardiff/pdf/flarescardiff-drinks_menu.pdf) [accessed 16/05/2011].
18. Cocktails menu in Revolution, Cardiff, reviewed April 2011.
19. Red Bull website (2011) [http://www.redbull.co.uk/cs/Satellite/en\\_UK/Gallery/Notting-Hill-Carnival-2010/Vodka-Red-Bull-021242898202365?GImageId=1242898690820#/image-9](http://www.redbull.co.uk/cs/Satellite/en_UK/Gallery/Notting-Hill-Carnival-2010/Vodka-Red-Bull-021242898202365?GImageId=1242898690820#/image-9) [accessed 16/05/2011].
20. Jägermeister website (2011) [http://www.jagermeister.com/cmsfiles/20260520\\_1\\_JM\\_Drinks\\_Recipes\\_Download\\_150.pdf](http://www.jagermeister.com/cmsfiles/20260520_1_JM_Drinks_Recipes_Download_150.pdf) [accessed 16/05/2011].
21. Halewood International website (2011) <http://www.halewood-int.com/home/brands/red-alert> [accessed 17/05/2011].
22. Marczinski, C.A, et al (2011) *Effects of energy drinks mixed with alcohol on behavioral control: risks for college students consuming trendy cocktails*, Alcoholism: Clinical and Experimental Research, first published online, available from: <http://onlinelibrary.wiley.com/doi/10.1111/j.1530-0277.2011.01464.x/abstract> [accessed 16/05/2011].
23. Ferreira, S.E. et al (2006) *Effects of energy drink ingestion on alcohol intoxication*, Alcoholism: Clinical and Experimental Research Volume 30, Number 4. [http://www.ncbi.nlm.nih.gov/pubmed/16573577?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_RVDocSum&ordinalpos=2](http://www.ncbi.nlm.nih.gov/pubmed/16573577?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=2) [accessed 17/05/2011].
24. Red Bull website (2011) [http://www.redbull.com/cs/Satellite/en\\_INT/red-bull-energy-drink/001242937921959?pcs\\_pvt=whenandwhere2drink](http://www.redbull.com/cs/Satellite/en_INT/red-bull-energy-drink/001242937921959?pcs_pvt=whenandwhere2drink) [accessed 16/05/2011].

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25. Thombs, D.L. et al (2009) *Event-level analyses of energy drink consumption and alcohol intoxication in bar patrons*, Addictive Behaviors, Volume, 35 Issue 4, online, available from: [http://www.marininstitute.org/site/images/stories/pdfs/energydrinks\\_and\\_intoxication.pdf](http://www.marininstitute.org/site/images/stories/pdfs/energydrinks_and_intoxication.pdf) [accessed 16/05/2011].
26. O'Brien, M.C. et al (2007) *Caffeinated cocktails: get wired, get drunk, get injured*, School of Medicine, Wake Forest University, online, available from: <http://www.cspinet.org/new/pdf/obrien.pdf> [accessed 16/05/2011].
27. NHS Choices website (2011) <http://www.nhs.uk/Conditions/Dehydration/Pages/Symptoms.aspx> [accessed 16/05/2011].
28. Schmidt, S. (2010) *Health Canada strikes an uneasy regulatory balance on alcoholic energy drinks*, online, available from: <http://www.canada.com/health/Health+Canada+strikes+uneasy+regulatory+balance+alcoholic+energy+drinks/3039397/story.html> [accessed 16/05/2011].
29. US Food and Drug Administration (2010) *Questions and answers: caffeinated alcoholic beverages*, online, available from: <http://www.fda.gov/Food/FoodIngredientsPackaging/ucm233726.htm> [accessed 17/05/2011].
30. Rose, G. (2010) *Labour: ban high-caffeine alcohol*, The Sunday Times, 7 February 2010, online, available from: <http://www.timesonline.co.uk/tol/news/uk/scotland/article7017981.ece> [accessed 17/05/2011].
31. Johnson, S. (2010) *MSPs reject alcohol minimum pricing*, The Daily Telegraph, 10 November 2010, online, available from: <http://www.telegraph.co.uk/news/uknews/scotland/8124301/MSPs-reject-alcohol-minimum-pricing.html> [accessed 16/05/2011].

### About Alcohol Concern

Alcohol Concern is the national agency on alcohol misuse campaigning for effective alcohol policy and improved services for people whose lives are affected by alcohol-related problems. We are a membership body working at a national level to influence alcohol policy and champion best practice locally. We support professionals and organisations by providing expertise, information and guidance. We are a challenging voice to the drinks industry and promote public awareness of alcohol issues.

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