COMMITTEE ON TOXICITY OF CHEMICALS IN FOOD, CONSUMER PRODUCTS AND THE ENVIRONMENT

COT STATEMENT ON THE INTERACTION OF CAFFEINE AND ALCOHOL AND THEIR COMBINED EFFECTS ON HEALTH AND BEHAVIOUR: LAY SUMMARY

1. The Committee on Toxicity (COT) was asked by the Food Standards Agency to comment on concerns that caffeine in energy drinks may interact with alcoholic beverages in causing adverse behavioural or toxic effects.

2. Since 2004, energy drinks have been the fastest growing sector of the drinks market in the UK. The popularity of consuming energy drinks mixed with alcoholic beverages has also increased. Moreover, individuals who consume high quantities of both energy drinks and alcohol, are perceived to engage in a greater degree of risk-taking. This has raised concerns about the health effects of caffeine and alcohol in combination. In particular, a phenomenon described as “wide awake drunk” has been suggested, in which the stimulatory effect of caffeine prevents consumers of alcohol from realising how intoxicated they are, thereby increasing the potential for toxic damage to the body and adverse behavioural effects. Most energy drinks contain levels of caffeine approximately equivalent to those found in a cup of coffee (approximately 80mg caffeine per 250ml can).

3. Currently beverages containing more than 150 mg/l caffeine (other than those based on coffee or tea) must carry the statement ‘High caffeine content’. Under new Regulations, which come into effect on the 13 December 2014, these beverages must carry the statement ‘High caffeine content. Not recommended for children or pregnant or breast feeding women’ in the same field of vision as the name of the beverage, followed by a reference in brackets to the caffeine content expressed in mg per 100ml. There are currently no legal restrictions on the amount of caffeine that may be present in a food or drink product.

4. Caffeine acts primarily as a stimulant, increasing arousal and vigilance, reducing fatigue, and decreasing reaction times in some tasks. At higher doses, it can induce insomnia, anxiety, tremors, and seizures. Susceptibility to the effects of caffeine varies between individuals as people develop tolerance with repeated exposure.

5. Alcohol is widely consumed in the UK with at least one alcoholic drink being reported as consumed in the week before interview by 68% of men and 54% of women in the 2009 General Lifestyle Survey carried out by the Office for National Statistics. It depresses brain function, and outward signs of intoxication including impaired sensory perception and control of movements, slowed cognition, and stupor. How exactly it causes these effects has not been fully elucidated.

6. Accurate estimates of the extent to which alcohol and caffeine are consumed together are not available. One of the reasons for this is that drinks containing alcohol and caffeine are often sold separately and mixed by the consumer rather than being formulated in a single product – for example rum with cola or energy drinks with vodka.

7. Various studies were identified which provided relevant information. These included studies of the association between consumption of energy drinks and alcohol, and whether this is influenced by genetic constitution; of risk-taking behaviour, adverse alcohol-related incidents and use of illicit drugs in people who consume alcohol with energy drinks; and of brain function following experimental dosing with caffeine and alcohol in combination. In addition a number of published reports described cases of illness or death following consumption of caffeine with alcohol.

8. The balance of evidence suggests that higher intake of caffeine is associated not only with higher alcohol intakes but also with use of other psychoactive substances. There is limited evidence that the relationship may be determined, at least in part, by an individual's genetic make-up. It appears that, at least in some population groups, there is a correlation between high consumption of alcohol and of energy drinks specifically. However, it is unclear whether this is because consumption of energy drinks causes people to drink more alcohol, or because people who are inclined to more risky behaviour tend generally to consume larger quantities of psychoactive substances, including caffeine and alcohol.

9. A number of studies have suggested that caffeine can reduce the outward effects of alcohol, especially on reaction times, but other investigations have failed to support this. The evidence that perceptions of alcohol intoxication are modified by caffeine is conflicting. Overall, the range of methods used in reported studies prevents firm conclusions on whether caffeine counteracts the short-term effects of alcohol on brain function.

10. Published case reports of illness or death following consumption of caffeine and alcohol in combination do not allow firm conclusions about the contribution of either substance, or of whether caffeine increases the toxicity of alcohol.

11. Overall, the COT concludes that the current balance of evidence does not support a harmful toxicological or behavioural interaction between caffeine and alcohol. However, because of limitations in the available data, there is substantial uncertainty, and if important new evidence emerges in the future, then this conclusion should be reviewed.

12. The full COT statement can be found at:
http://cot.food.gov.uk/pdfs/cotstatementcaffalco201204.pdf

Lay summary to COT statement 2012/04
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