

## A student survey investigating the prevalence and frequency of energy drink use and the motivations for consumption in the UK

Sean J Johnson<sup>1</sup>, Chris Alford<sup>1</sup>, Joris C Verster<sup>2,3</sup>, Karina Stewart<sup>1</sup>

1. University of the West of England, Bristol, U.K.  
2. Utrecht University, Utrecht, The Netherlands  
3. Swinburne University, Melbourne, Australia



## Disclosure

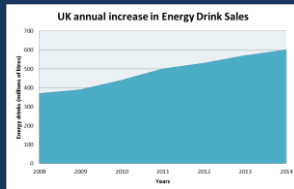
This study was supported by Red Bull GmbH.

Sean Johnson has undertaken sponsored research for Pfizer, AstraZeneca, Merck, Gilead, Novartis, Roche and Red Bull GmbH.

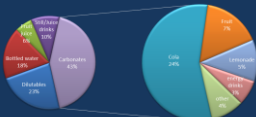
Chris Alford has received funding from the UK Ministry of Defence, Red Bull GmbH, and Sanofi-Aventis.

Joris Verster has received grants / research support from The Dutch Ministry of Infrastructure and the Environment, Janssen Research and Development, Takeda, Red Bull GmbH, and has acted as a consultant for Canadian Beverage Association, Centraal Bureau Drogisterijbedrijven, Coleman Frost, Deenox, Eisai, Purdue Pharma, Red Bull, Sanofi-Aventis, Sepracor, Takeda, Transcept, and Trimbos Institute.

## Energy Drinks Market

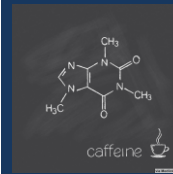


UK Soft Drink Sector

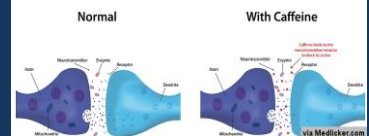


BSDA Annual Report (2015)

## What are Energy Drinks?



### The Action of Caffeine



## Energy drink caffeine content

Ingredient composition of primary EDs marketed in UK per 250ml

Constituents	Red Bull	Monster	Rockstar
Taurine	1000mg	1000mg	1000mg
Caffeine	80mg	80mg	80mg
Glucuronolactone	-	5mg	-
Inositol	50mg	5mg	25mg
Vitamin B2 (riboflavin)	-	1.8mg	3.5mg
Vitamin B3 (niacin)	20mg	20mg	20mg
Vitamin B5 (panthothetic acid)	5mg	-	-
Vitamin B6 (pyridoxine)	5mg	2.13mg	5mg
Vitamin B12 (cobalamin)	5mg	5mg	5mg
Ginseng Root Extract	-	205mg	50mg
Guarana Seed Extract	-	5mg	25mg



## Research attention on the effect of consuming energy drinks

A glucose-caffeine 'energy drink' ameliorates subjective and performance deficits during prolonged cognitive demand

David O. Kennedy\*, Andrew B. Scholey

The effects of Red Bull Energy Drink on human performance and mood

C. Alford, H. Cox, and R. Wescott



Safety issues associated with commercially available energy drinks

Karin A. Closson, Kelly M. Shisler, Sydney E. McQueen, and Nikki Perard

## Safety of caffeine



The following do not raise safety concerns for the general healthy population:

- Single doses of caffeine up to 200mg (3mg/kg bw)
- Up to 400mg per day (5.7mg/kg bw per day) consumed throughout the day.
- Other common constituents of “energy drinks” (i.e. taurine) or alcohol (up to BAC 0.08%) are unlikely to adversely interact with caffeine. Up to these levels of intake, caffeine is unlikely to mask the subjective perception of alcohol intoxication.

**Review**  
Effects of mixing alcohol with caffeinated beverages on subjective intoxication: A systematic review and meta-analysis  
Sarah Benson<sup>1</sup>, Joris C. Verster<sup>2,3</sup>, Chris Alford<sup>4</sup>, Andrew Scholey<sup>5,6</sup>

<sup>1</sup>Centre for Human Psychopharmacology, Swinburne University, Melbourne, VIC 3122, Australia  
<sup>2</sup>Utrecht Institute for Pharmaceutical Sciences, Division of Pharmacology, Utrecht University, Utrecht, The Netherlands  
<sup>3</sup>Department of Health and Social Sciences, University of the West of England, Bristol BS15 9QY, UK

## Aims

1. Investigate the prevalence and frequency of energy drink use among UK students.
2. Situate these consumption practices within the EFSA opinion.
3. Motivations for consuming energy drinks.

## Method

Online survey advertised via UK University student union social media.

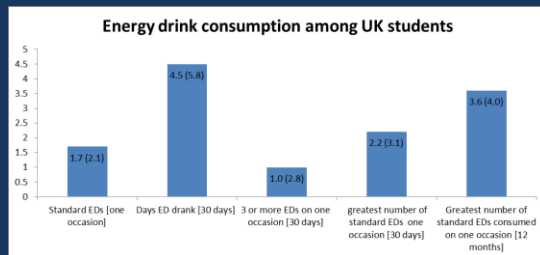
Assessed energy drink consumption when consumed alone and mixed with alcohol (AMED), as well as motivations for consumption.

Responses (N = 1873) were received from institutions from each country (England, Wales, Scotland, Northern Ireland).

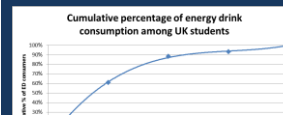


## Results: Energy Drink consumption

51% of students (44.7% Male, 55.3%Female) reported consuming energy drinks.

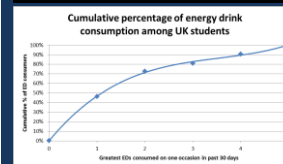


## Results: Energy Drink consumption



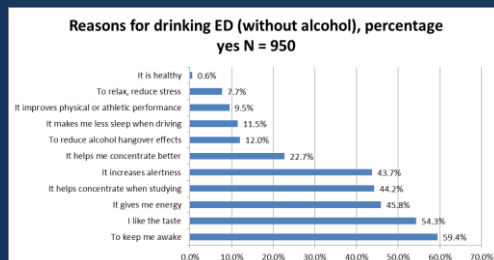
60% students consumed one energy drink on typical drinking occasion.  
88% students reported consuming 2 or less energy drinks.  
Only 7% reported consuming 3 or more energy drinks.

**Majority of students consume ED's in moderation and do not exceed the levels recommended by EFSA (2015)**



46% students consumed one energy drink on greatest drinking occasion in past 30 days.  
73% students reported consuming 2 or less energy drinks on greatest drinking occasion.  
19.2% reported consuming 3 or more energy drinks on their greatest drinking occasion.

## Motivations for consuming ED's



## Conclusion

- This first known UK survey found that energy drink consumption is a popular practice among UK students.
- However, on average energy drinks are consumed in moderation and do not exceed the levels recently recommended by EFSA (2015).
- The majority of students consume energy drinks due to an appreciation of their taste and the expectations regarding the positive effects of the drinks functional ingredients.

## Implications for future research and policy practice

These findings suggest that for the majority of consumers, energy drinks do not pose a serious public health problem.

In order to inform policy further research should examine total caffeine consumption from all sources among the student population.