A survey of energy drinks on the island of Ireland

2019

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Foreword

The purpose of this work was to survey the sugar and caffeine content of energy drink products available on the market on the island of Ireland (IOI) during a 1 week period in 2019 and to compare this with data gathered in 2015. This data will be used to update the energy drinks infographics available for the public on the ***safe***food website. The timing of these 2 reports provides a snapshot of the energy drinks market before and after the implementation of the sugar tax. The introduction of the sugar levy is a potential catalyst for change within the energy drink market and it is important to document any shift in sugar and caffeine content, in particular.

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1 Introduction

What is an energy drink?

An energy drink is defined by the European Food Safety Authority (EFSA) as:

> "a non-alcoholic drink that contains caffeine (usually its main ingredient), taurine, vitamins and sometimes a combination of other ingredients (such as guarana and ginseng, among others)"

What size is the energy drinks market?

The energy drinks market has expanded internationally in the last two decades. ***safe***food identified 10 products on the market on the island of Ireland (IOI) in 2000. In 2015 this had expanded to 39 products (1). Consumption of energy drinks in the UK increased by 155 % between 2006 and 2014, from 235 to 600 million litres and the total value of the market rose to £1.48 billion (2). There has been a 3.4 % growth in the volume of energy drinks sold off-trade in Ireland in more recent years (2015-2018), from 25.8 million litres to 26.7 million litres (3). The current volume of energy drinks sold in Ireland is equivalent to 5.5. litres per capita i.e. per head of population, placing it in the 94th percentile relative to other countries in western Europe (4).

Who drinks energy drinks?

A recent EFSA report (5) found that 68 % of adolescents were consumers of energy drinks with 12 % of them being chronic daily consumers. Furthermore, 30 % of adults were found to be consumers with 12 % described as chronic consumers (regularly consuming on 4-5 days a week or more). Despite the many concerns raised by the scientific and medical community, 56 % of energy drinks consumed by adults were consumed alongside alcohol.

What evidence is there on the risk of energy drinks?

There have been two evidence-based reviews on the impact of energy drinks on health since 2015. Visram et al. (2) reported that regular consumption of energy drinks has been linked with a number of adverse health symptoms such as headaches, sleeping problems, irritation and tiredness/fatigue. A 2018 report of the House of Commons Science and Technology Committee (6) indicated that there was further study needed to better understand the effects of caffeinated energy drink use in young people and adolescents.

Seifert et al (7) referenced that the National Poisons Information Centre in Ireland reported 17 energy drink adverse events including confusion, tachycardia, and seizures and 2 deaths between 1999 and 2005. These authors also noted that Germany has tracked energy drink–related incidents since 2002 and reported outcomes include liver damage, kidney failure, respiratory disorders, agitation, seizures, psychotic conditions, hypertension, heart failure, and death. Furthermore, consumption of beverages high in sugar is associated with adverse health outcomes such as obesity and type 2 diabetes.

What consumer protections are in place?

At EU level, the Consumer Information Regulation (EU) 1169/2011 (8), which came into force in December 2014, contains provisions regarding the labelling of beverages with an added caffeine content of more than 150 mg/litre. Therefore, the labelling of energy drinks must include the following: "High caffeine content. Not recommended for children or pregnant or breast-feeding women" followed by a quantitative indication of the product's caffeine content.

In the UK, there was a consultation on ending the sale of energy drinks to children[1] in 2018 but this measure was not approved (9). One major retailer in Ireland (Aldi) banned the sale of energy drinks to children under 16 in 2018 and the retailer also requires teenagers to show identification if they intend to buy soft drinks containing more than 150 mg of caffeine per litre.

How are energy drinks marketed?

Energy drinks are often marketed as performance boosters, both mentally and physically, with the Red Bull campaign "Red Bull gives you wings" being a well-known example of this. Energy drink marketing primarily targets young/adolescent males and often promotes the association between their products and an extreme lifestyle, Red Bull's association with extreme sports such as skydiving; surfing and skateboarding are the primary examples of this. Social media presence is a key aspect of energy drink marketing with major brands such as Red Bull and Monster employing sophisticated social media campaigns.

[1] https://consultations.dh.gov.uk/obesity/sale-of-energy-drinks-to-children/

2 Methodology

A snapshot survey was conducted to identify which brands and energy drinks were available to purchase in supermarkets on the island of Ireland in 2019. The top supermarkets, categorised as major, discount and convenience, were identified in both the Republic of Ireland (ROI) and Northern Ireland (NI). The purchasing was conducted in Cork and Belfast between 15–22 April. Both regular energy drinks and diet/sugar free variations were included in this survey. All energy drinks available in each of the supermarkets were purchased (once only). Using Euromonitor data, the top 3 energy drink brands in Ireland were identified to ensure inclusion in this survey, as well as the own brand supermarket variations (3). This is not a full representation of the market as not all flavour variations of certain products were bought due to identical sugar and caffeine levels to those already purchased.

Images were captured of the front of the products - label, ingredients list and nutrition label. Price per unit, volume per unit and serving and purchasing guidance was also collected. Sugar and caffeine content were the primary focus of this survey however; parameters such as sugar content (in relation to sugar levy cut off 5 g /100 ml) and regular versus diet/sugar free were also reviewed. All data was recorded in Excel and basic descriptors were calculated – mean, median, minimum, maximum and standard deviation.

Data on market share was identified and data on the marketing strategies used by energy drinks manufacturers was gathered via a review of their websites and social media channels.

3 Results

The number of energy drinks identified via the survey increased from 39 to 42 between 2015 and 2019 (Table 1). The 42 drinks included 26 brands. The 2019 figure may be an underestimation given that not every product variation was included in the 2019 survey. There was a marked increase in the number of drinks with a diet or sugar-free alternative and multiple flavour variations, 36 % (n=15) in 2019 relative to 23 % (n=9) in 2015. There has also been a growth in own-brands from only 3 in 2015 to 8 different own-brands in 2019. Regarding serving size 38 % (n=16) of drinks were sold as 500 ml, 60 % (n=25) of drinks were 250 ml and 2 % (n=1) of drinks were other unit volumes (i.e. 1000ml. Note: the 1000 ml bottle indicated a serving size of 250 ml and was analysed as a 250 ml serving). In comparison, 64 % of drinks in 2015 were 250 ml and 20 % of drinks were 500 ml.

Table 1: Quantity, type and serving sizes of products available in 2015 and 2019

	Total number of drinks sampled	Type % (n)		Serving size % (n)		
		Regular	Diet/sugar free	250 ml	500 ml	Other*
2015	39	77 (30)	23 (9)	64 (25)	20 (8)	16 (6)
2019	42	64 (27)	36 (15)	60 (25)	38 (16)	2 (1)

* Other serving sizes included 380ml, 440ml in 2015 and 550ml in 2019.

The 2015 survey identified 30 regular (containing sugar) energy drink products with a mean sugar content of 31 g per serving/10 g per 100 ml. The 2019 data shows that the mean sugar content of the drinks surveyed dropped to 22.6 g per serving with the biggest reduction being found in supermarket own-brand products (Table 2). This reduction is equivalent to almost 2 level teaspoons of sugar per serving.

Table 2: Sugar content of regular energy drinks on the island of Ireland in 2015 and 2019

	Mean sugar content per 100mL	Mean Sugar Content per serving		Range per serving	
	(g)	(g)	Level teaspoons*	(g)	Level teaspoons*
2015	10	31	7.7	11-55	2.7-13.7
2019	6	22.6	5.7	3.5-70	1-17.5

* A level teaspoon of sugar is 4 g

The sugar content of regular energy drinks by common serving sizes were

- Per 250 ml serving – mean sugar content of 14 g with a range 7.5-27.5 g sugar (equivalent to 2-7 level teaspoons of sugar)
- Per 500 ml serving – mean sugar content of 33.5 g with a range of 3.5 g-70 g (equivalent to 1-17.5 level teaspoons of sugar)

Of the 3 leading brands, there was a reduction in the sugar content of 1 of these but no reduction in the sugar content of the other 2. (Table 3).

Table 3: Sugar and caffeine content on top energy drinks brands in Ireland in 2015 and 2019

	Serving size (ml)	2015		2019	
		Caffeine (mg)	Sugar (g)	Caffeine (mg)	Sugar (g)
Red Bull	250	80	27.5	80	27.5
Monster	500	160	55	160	55
Lucozade energy original	380	No data	33.1	46	17.1

Prior to the implementation of the sugar tax, the 2015 survey found that 74 % of energy drinks would have been eligible for taxation i.e. at least 5 g of sugar per 100ml (10) (Table 4). However, the 2019 data shows that only 41 % of energy drinks are eligible for taxation.

Table 4: Number of energy drinks eligible for sugar tax levy (>5g sugar/100mL) in 2015 and 2019

	Eligible for sugar tax % (n)	Not eligible for sugar tax % (n)
2015	74 (29)	26 (10)
2019	41 (17)	59 (25)

The caffeine content increased between 2015 and 2019 (Table 5). In 2019, the caffeine content ranged from 46-160 mg per serving with a mean caffeine content of 100.3mg per serving, equivalent to 1.25 cups of espresso. The caffeine content ranged from 75–106 mg (equivalent to 0.9-1.3 espressos) per 250 ml serving compared to a range of 46-160 mg (equivalent to 0.6-2 espressos) per 500ml serving. In contrast, in 2015 the mean caffeine content was 90mg per serving, which is equivalent to 1.1 cups of espresso and caffeine levels ranged from 37.5 mg per serving to 160 mg per serving. Table 5 shows that the increase in caffeine from 2015 to 2019 is apparent only for mean caffeine per serving and not per 100 mL (30.7 mg in 2015 vs 29 mg in 2019), highlighting the importance of serving size.

Table 5: Caffeine content per serving of energy drinks in 2015 and 2019

	Mean caffeine per serving (mg)	Mean caffeine per 100 ml (mg)	Range per serving (mg)	Equivalent espressos (cups)* per serving
2015	90	30.7	37.5 - 160	1.125
2019	100.3	29	46- 160	1.25

* An expresso contains 80mg caffeine

In 2015, 58 % of brands had one or more accounts on social media channels with the market leader having 61 Facebook accounts, 121 Twitter accounts and 20 YouTube accounts (not all these channels were specific to the Republic of Ireland). In 2019, 38 % of energy drink brands included in the 2019 survey had an active social media channel, likely due to the expansion of own-brand supermarket variations. However, the reach of existing brands like Red Bull and Monster continues to grow with millions of followers over multiple social media channels and major sponsorship deals in sports such as Formula 1, Football and various extreme sports. One novel finding is that energy drinks have begun to be marketed as “natural” with 11 % of energy drinks found in 2019 containing some reference to natural energy on the label.

It was clear from a review of the most recent market share data for Ireland (Table 6) that there are three top brands, Lucozade (52.6 %), Red Bull (15.8 %) and Monster Energy (12 %). The combined market share of these three brands is 80 % (11).

Table 6: Local brand name brand shares of off-trade energy drinks for Ireland: % volume 2018*

Brand (global brand owner)	% share off trade volume
Lucozade (Suntory Holdings Ltd)	52.6
Red Bull (Red Bull GmbH)	15.8
Monster Energy (Monster Beverage Corp)	12.0
Mountain Dew Energy (Pepsico Inc)	2.5
Red Bull Sugar Free (Red Bull GmbH)	2.3
Red Bull Zero (Red Bull GmbH)	1.9
Monster Energy Absolute Zero (Monster Beverage Corp)	1.6
Club (Britvic Plc)	0.8
BPM Energy (Monster Beverage Corp)	0.7
Boost	0.5
Relentless (Monster Beverage Corp)	0.4
28 black (Calidris 28 AG)	0.4
V (Suntory Holdings Ltd)	0.1
Private Label	2.8
Others	5.8
Total	100.0

*Taken from Euromonitor International data

4 Key findings

- There was a small increase in the number of energy dinks products available for purchase in supermarkets on the island of Ireland between 2014 and 2109.
- There was a marked increase in the number of energy drinks with a diet or sugar-free alternative.
- There was clear growth in the number of own-brand energy drinks available.
- There were an increase in the number of drinks sold in 500 ml serving sizes.
- The sugar content of the energy drinks decreased both per 100ml and per serving: from 10 g to 6 g per 10 ml and from 31 g to 22.6 g per serving (equivalent to almost 2 level teaspoons of sugar per serving).
- The mean caffeine content of all energy drinks increased from 90 mg to 106 mg per serving (80 mg in expresso cup) but remained the same per 100ml.
- The most recent data (2018) shows that there are three leading brands in the market place, with a combined market share of 80 %. There was a reduction in the sugar content of 1 of the leading brands but no reduction in the sugar content of the other 2.
- There was a reduction in the percentage of products eligible for sugar tax – from 74 % in 2015 to 41 % in 2019.

Sugar & Caffeine in Energy Drinks

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	Rockstar Xdurance	Energise Edge	Monster Energy	Monster Assault	Tiger	Red Bull Energy Drink	Red Bull The Blue Edition	Relentless Origin	Lucozade Energy Original	Boost	Tesco Blue Spark	Red Thunder	Blue Bear	Emerge	Monster Rehab	KX Energy	Mountain Dew
	500ml	440ml	500ml	500ml	250ml	250ml	250ml	500ml	380ml	250ml	250ml	250ml	250ml	250ml	500ml	250ml*	500ml
Sugar	17	14	14	14	7	7	7	6	4	3	3	3	3	3	3	1	0
	69g	55g	55g	55g	28g	28g	28g	24g	17g	12g	12g	12g	12g	11g	11g	4g	0g
Caffeine	2	2	2	2	1	1	1	2	½	1	1	1	1	1	2	1	1
	160mg	160mg	160mg	160mg	80mg	80mg	80mg	160mg	46mg	75mg	75mg	75mg	75mg	75mg	160mg	75mg	76mg

1 teaspoon = 4g sugar

1 cup of espresso = 80mg caffeine

Data collected April 2019

*KX Energy is no longer available in 250ml

Check before you choose

Energy drinks are not suitable:

- for children under 16 years of age
- for rehydration after sport or exercise
- as a mixer with alcohol
- for pregnant or breast-feeding women

For more information search safefood

5 Conclusion

The profile of energy drinks currently available in supermarkets on the island of Ireland relative to the profile of available drinks in 2015 suggests that the introduction of the sugar tax has coincided with the reduction of the amount of sugar in the drinks. However, this reduction needs to be considered in the context of a market place where the 3 leading brands have a combined market share of 80 %, there has been no reduction in 2 of these 3 brands.

6 References

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