Health Impact Assessment

Health Impact Assessment (HIA) Template

Name of decision:

Restricting the sale of high-caffeine energy drinks to children under the age of 16 years.

Purpose /aim of decision:

The proposal is intended to reduce children's consumption of high-caffeine energy drinks and consequently reduce exposure to excessive levels of caffeine

SECTION A – Completing a Health Impact Assessment

Population Group(s) affected by decision / policy

The proposal is primarily intended to benefit children and young people under the age of 16 in Wales by reducing their access to high-caffeine energy drinks and supporting improved health and wellbeing outcomes. However, the proposal may also affect other groups, including parents and carers, retailers, businesses, enforcement authorities and, where relevant, individuals responsible for selling high-caffeine energy drinks. Adults may also be affected by elements of the proposal, including the proposed approach to vending machine sales. These wider impacts are considered alongside the anticipated health benefits for children and young people.

Evidence indicates that high-caffeine energy drink consumption is common among children and young people and is associated with a range of adverse health and wellbeing.

Evidence reviewed by the Committee on Toxicity (COT) and subsequent UK evidence reviews has identified associations between energy drink consumption in children and young people and headaches, sleep problems, behavioural difficulties, poorer educational outcomes and lower wellbeing.[1]

Children living in more deprived communities may experience the greatest benefits from the proposal. Evidence from the National Diet and Nutrition Survey and research reviewed by SACN suggests that energy drink consumption is often highest among children from lower socio-economic groups. Consequently, the proposal has the potential both to improve health outcomes and to reduce health inequalities.

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[1] https://webarchive.nationalarchives.gov.uk/ukgwa/20190403144301/https:/cot.food.gov.uk/cotstatements/cotstatementsyrs/cot-statements-2019/c

Research consistently reports that children living in more deprived areas and from lower income households were more likely to consume high-caffeine energy drinks compared to those from more affluent areas and households.[2] [3]

Evidence gathered through the 2022 public consultation and the 2024 call for evidence also highlighted widespread concern amongst public health organisations, education stakeholders, local authorities, health professionals and members of the public regarding children's consumption of high-caffeine energy drinks. Respondents identified concerns relating to sleep, concentration, behaviour, mental wellbeing, oral health and healthy weight, alongside evidence that consumption may be higher amongst older children and those from more deprived communities. These findings support the assessment that the proposal has the potential to improve health outcomes and reduce health inequalities.

The proposal is expected to have a positive impact on children and young people under the age of 16 by reducing their access to high-caffeine energy drinks and supporting improved health and wellbeing outcomes. Parents and carers may benefit from greater support in encouraging healthier dietary choices for their children. The proposal will also affect retailers, vending machine operators, online sellers and other businesses through age-verification and compliance requirements, as well as local authorities responsible for enforcement. Adults may also be affected where restrictions apply to vending machine sales regardless of age.

Retailers, including supermarkets, convenience stores, online retailers, vending machine operators and out-of-home businesses, will need to introduce age-verification procedures and staff training. Local authority Trading Standards and Environmental Health services will be responsible for enforcing the legislation.

Overall, the proposal is expected to have a positive impact on public health while supporting wider Welsh Government objectives to improve diets, prevent ill health and reduce health inequalities.

Identification and assessment of effects on health

Intended Effects on Physical Health

The proposal is intended to reduce children's consumption of high-caffeine energy drinks and consequently reduce exposure to excessive levels of caffeine and, in many cases, free sugars.

[2] Vogel C, Shaw S, Strömmer S, Crozier S, Jenner S, Cooper C, Baird J, Inskip H and Barkeret M. Inequalities in energy drink consumption among UK adolescents: a mixed-methods study. Public Health Nutrition 2022; volume 26, issue 3, pages 575 to 585

[3] Brunton G, Kneale D, Sowden A, Sutcliffe K, and Thomas J. *Caffeinated energy drinks and effects in UK young people: A secondary analysis of population-level datasets*. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education.

The evidence indicates that high-caffeine energy drink consumption is associated with:

- Poor sleep quality and shorter sleep duration[4].
- Headaches and stomach aches.
- Caffeine-related symptoms such as nervousness, irritability and heart palpitations.
- Greater consumption of free sugars.
- Increased risk of dental decay and excess weight where sugar-sweetened energy drinks are consumed regularly.[5]

The SACN review found consistent evidence linking energy drink consumption with sleep difficulties amongst children and young people. Poor sleep is recognised as an important risk factor for both immediate and longer-term health outcomes. Improved sleep quality is therefore expected to be one of the most significant health benefits arising from the proposal. EFSA concluded that caffeine intakes of up to 3 mg/kg body weight per day do not give rise to safety concerns for children and adolescents. However, this threshold relates to total caffeine intake and is assessed on the basis of an individual's body weight rather than the caffeine concentration of a particular product. The proposed threshold of **150mg of caffeine per litre** is not intended to represent a safety threshold. Instead, it is used to identify and capture drinks that are commonly marketed and consumed as high-caffeine energy drinks. The proposal is informed by evidence that some children and young people consume these products regularly and that a single serving may contribute substantially to their daily caffeine intake. The restriction therefore seeks to reduce children's access to products that are most strongly associated with concerns about excessive caffeine consumption and its potential effects on health and wellbeing.

This is supported by evidence by Ajibo and others[6], short sleep duration and poor sleep quality were consistently associated with increased frequency of high-caffeine energy drink consumption.

The proposal also supports Welsh Government commitments set out in *Healthy Weight: Healthy Wales* by contributing to the creation of healthier food environments, supporting healthier dietary behaviours amongst children and young people, and helping to reduce health inequalities. It aligns with the programme's preventative, whole-system approach to improving diet, healthy weight and wellbeing across Wales.

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[4] Consumption of energy drinks by children and young people: a systematic review examining evidence of physical effects and consumer attitudes - ScienceDirect

[12] Effect of sugar-sweetened beverages on oral health: a systematic review and meta-analysis | European Journal of Public Health | Oxford Academic

[6] Ajibo C, Van Griethuysen A, Visram S, and Lake AA. Consumption of energy drinks by children and young people: a systematic review examining evidence of physical effects and consumer attitudes. Public Health 2024; volume 227, pages 274-281

Intended Effects on Mental Health and Wellbeing

Evidence suggests that energy drink consumption among children and adolescents is associated with a range of psychological and behavioural outcomes.[7]Evidence reviewed by SACN identified consistent associations between energy drink consumption and emotional and behavioural difficulties, lower psychological wellbeing, and poorer educational attainment and school performance among children and young people. These findings form part of the evidence base supporting the proposal.

Although much of the available evidence is observational and does not prove causation, the consistency of findings across multiple studies suggests that reducing consumption may contribute to improved wellbeing, behaviour and educational engagement. Improved sleep patterns resulting from reduced caffeine intake may also provide additional benefits for children's mood, emotional resilience, concentration and learning.

Unintended Effects on Physical and Mental Health

The available evidence suggests that any unintended adverse health impacts are likely to be limited compared with the anticipated benefits.

There is some uncertainty about whether restricting the sale of high-caffeine energy drinks could increase their appeal to some children and young people. However, evidence on the scale of any such effect is limited, and no significant adverse impacts on physical or mental health are anticipated. The impact of the regulations, including any unintended consequences, will be monitored following implementation

Overall, no significant adverse impacts on physical or mental health are anticipated.

[7] Regular energy drink consumption is associated with the risk of health and behavioural problems in adolescents. - Abstract - Europe PMC

Wider Determinants of Health

The wider determinants of health have been considered throughout policy development.

Determinant	Potential Impact
Social	Improved sleep, behaviour and concentration may contribute to better educational outcomes and greater participation in school and community life. The proposal may also help reduce the social normalisation of energy drink consumption among children.
Economic	Families may spend less on energy drinks. Retailers may incur some one-off implementation and staff training costs.The proposal is not expected to have a significant impact on employment or jobs, as the restriction applies only to sales to children under 16 and any reduction in sales is expected to be offset, at least in part, by purchases of alternative products.
Cultural	The legislation may help shift social norms around energy drink consumption and support healthier dietary choices.
Environmental	The proposal supports healthier retail and community food environments and aligns with wider efforts to improve availability and promotion of healthier products.

Health Equity Considerations

Reducing health inequalities is a key objective of the proposal.

Evidence suggests that children living in more deprived areas are more likely to consume energy drinks regularly and in greater quantities than children living in less deprived areas.[8] As energy drink consumption has been associated with a range of adverse physical and mental health outcomes, these harms may be experienced disproportionately by children from more deprived communities.[9]

Responses to both the 2022 consultation and the 2024 call for evidence also highlighted concerns regarding higher reported consumption of energy drinks amongst older children and those from lower socioeconomic groups. Consequently,

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[8] Vogel, C., Shaw, S. Strömmer, S. Crozier, S., Jenner, S., Cooper, C. Baird, J.. Inskap. H, and Barker, M. (2022), Inequalities in energy drink consumption among UK adolescents: a mixed-methods study | Public Health Nutrition | Cambridge Core

[9] Inequalities in energy drink consumption among UK adolescents: a mixed-methods study | Public Health Nutrition | Cambridge Core

the proposal may deliver greater health benefits amongst communities already experiencing poorer health outcomes and higher levels of deprivation.

By reducing access to energy drinks across Wales, the proposal is expected to deliver proportionately greater benefits to children who currently experience higher levels of consumption and poorer health outcomes. The proposal therefore supports Welsh Government ambitions to reduce health inequalities and improve healthy life expectancy.

Consideration has also been given to geographic differences in food environments, including urban and rural communities. No evidence has been identified to suggest that the proposal would have a disproportionate negative impact on individuals who share protected characteristics under the Equality Act 2010.

The evidence does not indicate that the proposal would affect children and young people differently on the basis of sex. However, if some groups of children and young people consume high-caffeine energy drinks more frequently than others, those groups may experience greater benefits from reduced access and consumption. Overall, the proposal is expected to have a positive impact on health and is not anticipated to widen existing health inequalities.

Short-Term and Long-Term Effects

The proposal reflects the five ways of working set out in the Well-being of Future Generations (Wales) Act 2015. It adopts a preventative approach by seeking to reduce potential health harms before they arise, supports long-term improvements in health and wellbeing, is integrated with wider Welsh Government commitments on healthy weight and reducing inequalities, and has been informed through consultation and evidence gathering.

Prevention

The legislation seeks to prevent avoidable health harms associated with excessive caffeine consumption during childhood and adolescence.

Long-term

The proposal supports healthier dietary habits during childhood and may contribute to improved health outcomes across the life course, reducing future demand on health and public services.

The proposal is expected to reduce children's access to energy drinks and increase awareness of associated health risks. In the longer term, it is expected to improve health outcomes, encourage healthier behaviours and contribute to reducing health inequalities

Integration

The proposal supports wider Welsh Government objectives relating to healthy weight, prevention, reducing health inequalities and improving children's health.

Collaboration

The policy has been developed with input from public health experts, local authorities, enforcement authorities, retailers, academics, voluntary organisations and other stakeholders.

Involvement

Evidence and views have been gathered through consultation exercises, a call for evidence and engagement with children and young people, parents and carers, public health organisations and businesses.

Summary of Health Effects

The available evidence suggests that restricting the sale of high-caffeine energy drinks to children under 16 is likely to result in overall positive health impacts. Evidence reviewed by SACN and other public health bodies indicates that energy drink consumption among children is associated with sleep problems, headaches, behavioural difficulties, lower psychological wellbeing and poorer educational outcomes.

The proposal is intended to reduce children's exposure to excessive caffeine and sugar, contributing to improved sleep, physical health, mental wellbeing and educational engagement. The greatest benefits are expected to be experienced by children living in more deprived communities, where consumption rates are often higher and health inequalities are more pronounced.

Potential unintended effects include substitution with other caffeinated products, continued access through informal routes and short-term caffeine withdrawal symptoms among some regular consumers. However, these risks are considered limited and are unlikely to outweigh the anticipated public health benefits.

Evidence and engagement

This assessment has been informed by:

- Welsh Government Healthy Food Environment Consultation (2022).
- Welsh Government Consultation of Proposal to end the sale of energy drinks to children under 16 (2022)
- Unhealthy Foods and Energy Drinks - A Snapshot Survey of Children and Young People in Wales - Children’s Commissioner for Wales
- Welsh Government Call for Evidence on Restricting the Sale of Energy Drinks to Children (2024).
- UK Government consultation *Ending the Sale of Energy Drinks to Children* (2018).
- National Diet and Nutrition Survey data.
- Published peer-reviewed research examining energy drink consumption and health outcomes among children and adolescents.
- Welsh Government impact assessments and policy development work.
- Stakeholder engagement with children and young people, parents and carers, public health organisations, health boards, local authorities, Trading Standards services, retailers, academics and third-sector organisations.

Consultation and stakeholder evidence was broadly consistent with the findings from the published literature. Across these sources there was consistent concern regarding the impact of energy drink consumption on children's sleep, behaviour, mental wellbeing, concentration and educational attainment. While some industry stakeholders questioned the strength of the causal evidence, the wider public health evidence base and stakeholder feedback indicated broad support for preventative action.

Parents and teachers have expressed concerns about children's consumption of high-caffeine energy drinks. In the Department for Education's Omnibus survey (December 2024[10]), 82% of parents were concerned about potential negative effects, with 51% very concerned. Key concerns included impacts on oral health, sleep, behaviour, energy levels, concentration, mood and mental health, as well as, to a lesser extent, the potential for energy drinks to replace meals.

Of teachers surveyed, 61% agreed or strongly agreed that the consumption of high-caffeine energy drinks negatively impacts the health and wellbeing of pupils at their school. Almost 50% of teachers agreed or strongly agreed that the consumption of energy drinks negatively impacts pupil behaviour, and ability to learn.[11]

Evidence from England indicates that 9% of children aged 11 to 15 years reported consuming high-caffeine energy drinks between two and four times per week in 2018[12], demonstrating that regular consumption occurs among a notable proportion of young people.

The Food Standards Agency advises that children should consume caffeine in moderation, based on the European Food Safety Authority's scientific assessment of caffeine safety.

Strength of Evidence and Limitations

This assessment is informed by evidence from the Scientific Advisory Committee on Nutrition (SACN), published academic research, stakeholder engagement, consultation responses and evidence submitted through the Welsh Government's Call for Evidence.

While much of the available research is observational and therefore cannot establish a definitive causal relationship between energy drink consumption and every reported health outcome, the evidence consistently identifies associations between energy drink consumption and poorer sleep, headaches, behavioural difficulties, lower psychological wellbeing and poorer school performance. We do not expect further evidence on children to become available, due to ethical and feasibility issues that limit the ability to undertake causal research on this topic in children.

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[10] Department for Education (2025) Parent, pupil and learner voice: omnibus surveys for 2024 to 2025. Parent, pupil and learner voicer data tables: 2024 to 2025 academic year, December 2024 parent tables.

[11] Department for Education (2025) School and college voice: omnibus surveys for 2024 to 2025. School and college voice data tables: 2024 to 2025 academic year, December 2024 teacher tables.

[12] Brooks F, Klemera E, Chester K, Magnusson J and Spencer N. Health behaviour in school-aged children (HBSC) national report: findings from the 2018 HBSC study for England. University of Hertfordshire 2020.

The proposal has therefore been developed on the basis that reducing children's access to high-caffeine energy drinks is likely to deliver net positive public health benefits, notwithstanding some uncertainty regarding the scale of individual outcomes.

The European Food Safety Authority has not set a safe caffeine intake level for children and adolescents, citing insufficient information available to derive this.[13]

The threshold (3 milligrams of caffeine per kilogram of body weight per day) is the same as is used for the safety of single servings of caffeine in healthy adults.[14] However, the European Food Safety Authority indicates no safety concerns with adults consuming up to 400 milligrams of caffeine over the course of a day, which is almost 6 milligrams of caffeine per kilogram of body weight per day – double the level of 'no safety concern' for children.

The EFSA opinion concluded that caffeine intakes of up to 3 mg/kg body weight per day do not give rise to safety concerns for children and adolescents. However, evidence indicates that some children and young people consume caffeine at levels exceeding this threshold, particularly through high-caffeine energy drinks. The proposal has therefore been informed by the wider evidence base concerning children's consumption patterns and the potential adverse effects associated with higher levels of caffeine intake.

Mitigation and enhancement

The anticipated health impacts of the proposal are strongly positive. To maximise benefits and minimise potential unintended consequences, Welsh Government will:

- Develop guidance for retailers and enforcement authorities.
- Provide clear public information on the rationale for the restriction and the health risks associated with excessive caffeine consumption.
- Promote healthier alternatives through wider healthy eating and healthy weight initiatives.
- Monitor whether children substitute energy drinks with other high-caffeine products.
- Undertake post-implementation monitoring and evaluation.

These measures will help ensure the full public health benefits of the proposal are realised.

[13] European Food Safety Authority (EFSA) panel on dietetic products, nutrition and allergies. Scientific opinion on the safety of caffeine. EFSA Journal 2015: volume 13, issue 5, article number 4102

[14] European Food Safety Authority (EFSA) panel on dietetic products, nutrition and allergies. Scientific opinion on the safety of caffeine. EFSA Journal 2015: volume 13, issue 5, article number 4102

Overall health impacts

Overall Expected Effect on Physical and Mental Health

Positive

The evidence indicates that reducing children's access to high-caffeine energy drinks is likely to result in net positive effects on health and wellbeing.[15] The most significant anticipated benefits relate to improved sleep, reduced caffeine-related adverse effects, improved mental wellbeing and healthier dietary habits. These benefits support both immediate health improvement and longer-term disease prevention.

Overall Expected Effect on Health Inequalities

Reduce

Children from more deprived communities appear to consume energy drinks at higher rates and are therefore likely to experience proportionately greater benefits from the proposal. The legislation is consequently expected to contribute to reducing health inequalities and supporting Welsh Government prevention and equity objectives.

Influence on decision-making

This Health Impact Assessment has informed the development of the proposal by identifying both the expected benefits and potential risks associated with restricting the sale of high-caffeine energy drinks to children.

The assessment has reinforced the conclusion that the anticipated benefits to children's physical and mental health outweigh the identified risks. It has also highlighted the importance of public awareness activity, monitoring consumption patterns following implementation and assessing any evidence of substitution with other caffeinated products.

Residual risks remain, including substitution effects, informal purchasing routes and short-term withdrawal symptoms among some consumers. However, these risks are not considered sufficient to outweigh the significant anticipated public health benefits.

The assessment has also informed consideration of a statutory restriction compared with reliance on voluntary retailer action alone. Evidence gathered through consultation and the Call for Evidence suggested that voluntary restrictions are not applied consistently by all retailers and do not provide universal protection for children and young people.

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[15] END0012 - Evidence on Energy drinks

Monitoring and ongoing review

The impact of the legislation should be monitored through existing health surveillance systems, population surveys and evaluation activities.

Potential indicators include:

- Self-reported energy drink consumption among children and young people.
- Sleep, wellbeing and behavioural indicators collected through health and school surveys.
- Obesity and dental health measures.
- Retailer compliance and enforcement activity.
- Feedback from enforcement authorities and stakeholders.
- Evidence of substitution to alternative high-caffeine products.

A post-implementation review should be undertaken to assess whether the regulations are achieving their intended objectives, identify any unintended consequences and determine whether further policy intervention is required.

SECTION C:

Deputy Director Statement of Assurance

I hereby confirm that I, Ed Wilson, Deputy Director Public Health Improvement, am satisfied that the proposed decision to which the assessment relates is of a strategic nature about how to exercise the functions of the Welsh Ministers.