



CONSUMERS ASSOCIATION OF SINGAPORE

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MEDIA RELEASE

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CASE warns youths against caffeine overconsumption after test finds mixed drinks with up to 282mg of caffeine per serving

The Consumers Association of Singapore (“CASE”) today cautioned young consumers against mixing multiple sources of caffeine in a single drink, after its test found that all six mixed drink combinations exceeded 100mg of caffeine per serving.

The highest-tested combination—comprising two different brands of energy drinks and espresso—contained 282.1mg of caffeine in a 350g serving, nearly three times of the recommended limit of 100mg of caffeine per day for adolescents.

Background

In 2024, local media reported instances of youths mixing caffeinated drinks, including energy drinks and coffee, to stay alert or achieve a stronger caffeine effect.¹ These reports raised concerns that young consumers may not fully realise how quickly caffeine intake can add up when different drinks are combined.

In September 2025, CASE President and Member of Parliament for Radin Mas, Mr Melvin Yong, raised the issue in Parliament.² He asked whether the Ministry of Health was studying overseas measures to restrict the sale of high-caffeine energy drinks to youths, and whether local studies had been conducted on the impact of such drinks on youths in Singapore. The Ministry replied that there were no local studies being conducted at the time.

More recently, in 2026, the British Government announced that England will ban the sale of high-caffeine energy drinks (containing over 150mg of caffeine per litre)³ to those under 16 from April 2027, subject to parliamentary approval.

There is currently no internationally recognised health-based guidance on daily caffeine intake. The Health Promotion Board (“HPB”) advises that healthy adults consume caffeine in

¹ <https://www.straittimes.com/singapore/brewing-trouble-young-people-down-dangerous-caffeine-combos-to-be-wide-awake-drunk>

² <https://www.moh.gov.sg/newsroom/regulating-high-energy-drink-sales-to-youths-under-16-and-impacts-of-consumption-on-youths-in-singapore/>

³ <https://www.gov.uk/government/consultations/banning-the-sale-of-high-caffeine-energy-drinks-to-children/banning-the-sale-of-high-caffeine-energy-drinks-to-children>

moderation, with a general guide of up to 400mg per day⁴. For adolescents aged 12 to 18 years, the American Academy of Pediatrics recommends caffeine intake of no more than 100mg daily – the equivalent of one cup of brewed coffee or two cups of black tea⁵. Consuming high levels of caffeine may lead to symptoms such as headaches, rapid heart rate, anxiety, tremors and insomnia.⁶

CASE conducted the test to provide consumers with objective information on caffeine levels in commonly mixed caffeinated drink combinations, and to raise awareness of the risk of unintentionally consuming excessive amounts of caffeine.

Test Methodology and Results

The combinations tested were prepared using common caffeinated beverages such as matcha, energy beverages, and espresso, under standardised reconstitution ratios to ensure consistency.⁷ Samples were extracted using boiling water, after which a portion of the extract was injected into a high-performance liquid chromatography system equipped with an ultraviolet-visible detector. Caffeine content was then quantified against standards of known concentration. Each mixed beverage was subsequently analysed to determine its caffeine concentration (mg/100g) and total caffeine content per serving.

Of the six combinations tested, all exceeded the recommended daily caffeine amount of 100mg for adolescents. Four combinations that included a single energy beverage contained between 100.45mg and 106.4mg of caffeine per 350g serving. This means that consuming just one of these mixed beverages could already exceed the recommended maximum daily caffeine amount for adolescents.

The remaining two combinations, which contained two energy beverages mixed with espresso, had substantially higher caffeine levels. The highest-tested combination contained 282.1mg of caffeine per 350g serving—nearly three times the recommended maximum daily caffeine amount for adolescents, and equivalent to about three cups of brewed coffee.⁸

Consumer Advisory

HPB advises individuals to consume caffeine in moderation and continue to raise awareness of the potential adverse effects of excessive caffeine intake. CASE advises adolescents and their parents to be mindful of total caffeine intake and to take the following precautions:

- Prioritise good-quality sleep, balanced meals and adequate hydration to support concentration and performance.
- Avoid mixing multiple caffeinated drinks or ingredients in a single serving, such as energy drinks, coffee, espresso, matcha or tea.
- Check product labels for caffeine content where available, and keep track of caffeine consumed across different drinks in a day.

⁴ <https://www.healthhub.sg/well-being-and-lifestyle/food-diet-and-nutrition/i-love-coffee-i-love-tea>

⁵ <https://www.kkh.com.sg/publications/patient-care/how-much-caffeine-is-safe-for-students>

⁶ <https://www.mountelizabeth.com.sg/health-plus/article/coffee-what-caffeine-does-to-your-heart-and-brain>

⁷ Refer to Annex A for the beverage combinations and test results.

⁸ According to the US Food and Drug Administration (FDA), a typical 8-ounce (approximately 237ml) cup of ground coffee contains around 95 mg of caffeine. See Annex B for the caffeine content of more food and beverage items.

- Avoid caffeinated drinks in the late afternoon and evening. Those who experience sleep problems should consider stopping caffeine intake earlier in the day, as poor sleep can affect concentration, school performance and daily functioning.
- Keep caffeine intake to a minimum for children. For adolescents, caffeine intake should be no more than 100mg daily.
- Watch for symptoms of excessive caffeine intake, such as headaches, rapid heart rate, anxiety, tremors, stomach discomfort or insomnia, and reduce caffeine intake if such symptoms occur.

Conclusion

Mr Melvin Yong, President of CASE, said: “CASE’s test shows how easily youths can exceed 100mg of caffeine per day when they mix caffeinated drinks. With the exam period approaching, some youths may turn to caffeinated drinks to stay alert, but they should be careful not to overconsume caffeine or mix multiple caffeinated products. Excessive caffeine intake can affect sleep and well-being, which in turn may affect concentration and school performance. We urge youths and parents to be mindful of total caffeine intake and to avoid mixing multiple sources of caffeine in a single drink. Consumers should check caffeine labels where available, monitor total caffeine intake across the day, and seek medical advice if they experience persistent discomfort or sleep-related issues after consuming caffeinated drinks.”

Melvin Yong
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About the Consumers Association of Singapore:

The Consumers Association of Singapore (“CASE”) is an independent, non-profit organisation that is committed to protecting consumers’ interest through information and education and promoting an environment of fair and ethical trade practices. One of its key achievements is in advocating for the Consumer Protection (Fair Trading) Act (CPFTA) 2003 which came into effect on 1 March 2004.

For more information, please visit the CASE website at www.case.org.sg or follow us on:
Facebook: www.facebook.com/casesg
Instagram: https://www.instagram.com/casesg_official/

Annex A – Beverage Combinations and Test Results

S/N	Mixed beverage	Caffeine result	Total caffeine
1	100ml matcha + 250ml of Red Bull	28.7mg/100g	100.45mg for 350g
2	250ml matcha + 100ml of Red Bull	30.1mg/100g	105.35mg for 350g
3	100ml matcha + 250ml of Monster	30.4mg/100g	106.4mg for 350g
4	250ml matcha + 100ml of Monster	30.3mg/100g	106.05mg for 350g
5	125ml of Monster + 125ml of Red Bull +30ml Espresso	58mg/100g	162.4mg for 280g
6	145ml of Monster + 145ml of Red Bull + 60ml of Espresso	80.6mg/100g	282.1mg for 350g

Reconstitution Ratio:

- 100ml of Matcha: 2g matcha powder + 100ml of water
- 250ml of Matcha: 5g matcha powder + 250ml of water
- 30ml Espresso: 8g Espresso powder + 30ml of water
- 60ml of Espresso: 16g Espresso powder + 60ml of water

Annex B – Caffeine Content of Commonly Consumed Beverages and Food⁹

Food or beverage	Typical serving size	Approximate caffeine content
Espresso	60ml	80mg
Filter coffee	200ml	90mg
Black tea	220ml	50mg
Cola	355ml	40mg
Energy drink	250ml	80mg
Plain chocolate	50g	25mg
Milk chocolate	50g	10mg

⁹ <https://www.efsa.europa.eu/en/topics/topic/caffeine>