# Does Green Tea Have Caffeine

From the teas.co.uk wiki

> **Green tea and caffeine, in summary:** Yes, green tea has caffeine: a real, moderate dose, lower than black on average but not zero, varying widely by type, with matcha the outlier.

*Last reviewed by the teas.co.uk team in April 2026.*

**Yes, green tea has caffeine, typically 25-40mg per 200ml cup, roughly half of British black tea and a third to a quarter of filter coffee. Matcha is much higher (60-80mg per gram of powder, so a single cup can deliver 80-120mg). Decaffeinated green tea drops to 2-5mg.** The "alert but unruffled" feeling green tea produces is the combined effect of moderate caffeine and L theanine, different chemistry from coffee. This is the practical numbers guide.

## The numbers across green tea types

| Green tea type | Caffeine per 200ml cup |
|---|---|
| Sencha (Japanese steamed) | 30-50mg |
| Gyokuro (shaded sencha) | 50-70mg (slightly higher due to shading) |
| Bancha (lower grade Japanese) | 20-30mg |
| Hojicha (roasted Japanese) | 15-25mg (roasting reduces caffeine) |
| Genmaicha (rice blend Japanese) | 15-25mg (diluted by rice content) |
| Long Jing (Chinese pan fired) | 30-40mg |
| Bi Luo Chun (Chinese) | 30-40mg |
| Gunpowder (Chinese rolled) | 30-40mg |
| Jasmine green tea | 30-40mg |
| Matcha (1g whisked into 70ml) | 60-80mg |
| Matcha latte (2g) | 120-160mg |
| Decaf green tea | 2-5mg |

## Why the variation

Caffeine content in green tea depends on:

- **Leaf age.** Younger leaves and tip buds contain more caffeine than older leaves. Premium teas (which use younger leaves) are slightly higher in caffeine.
- **Shading.** Shade grown teas (gyokuro, matcha) are higher in caffeine because the plant produces more caffeine under shade stress.
- **Processing.** Roasting (hojicha) breaks down some caffeine. Steaming (sencha) preserves it.
- **Brewing temperature.** Hotter water extracts more caffeine. Green tea brewed at 80°C extracts less than at boiling water.
- **Brewing time.** Most caffeine extracts in the first 2-3 minutes. Longer brewing extracts slightly more but mostly extracts tannins.

## Green tea vs other caffeine sources

| Drink | Caffeine per 200ml cup |
|---|---|
| Espresso shot (30ml) | 60-80mg |
| Filter coffee | 80-120mg |
| Black tea (Yorkshire, Tetley) | 40-50mg |
| Green tea (typical) | 25-40mg |
| White tea | 15-25mg |
| Matcha (2g) | 120-160mg |
| Yerba mate | 50-70mg |
| Cola (330ml can) | 30-40mg |
| Energy drink (250ml) | 80mg |

Two readings worth drawing out of that table: green tea gives similar caffeine to a can of cola without the sugar or other additives, and an energy drink is roughly double a cup of green tea.

## The L theanine difference

Green tea contains L theanine, an amino acid that crosses the blood brain barrier and produces a quietly focused state. L theanine combines with caffeine to produce green tea's signature "alert without being jittery" character.

The ratio matters:

- **Coffee:** caffeine high, L theanine zero. Sharp kick, possible jitter.
- **Black tea:** caffeine moderate, L theanine moderate. Smoother alertness.
- **Green tea:** caffeine moderate, L theanine high. Steady, alert focus.
- **Matcha:** caffeine high, L theanine very high (whole leaf consumed). Long, unhurried focus.

Put as numbers:

| Drink | Caffeine:L theanine ratio |
|---|---|
| Coffee | 100:0 (no L theanine) |

| | |
|---|---|
| Black tea | 2:1 to 3:1 |
| Green tea | 1:1 to 2:1 |
| Gyokuro / matcha | 1:2 (more L theanine than caffeine) |

Gyokuro and matcha, both shade grown, hold the most L theanine, which puts them at the far end of this table.

In practice it feels like a gentler curve, with a slower rise and a slower fall. It suits sustained work that benefits from unruffled concentration: writing, study, complex problem solving. Coffee is the sharper hit, green tea the longer, steadier one. Different tools for different work.

## Brewing for less caffeine

If you want green tea but with reduced caffeine load:

### Temperature

- 75°C: moderate caffeine, a gentle cup.
- 85°C: more caffeine, slightly more bitter.
- 95-100°C: maximum caffeine, often bitter from over extraction.

### Time

- 1 minute: roughly 50% of the caffeine extracted.
- 2-3 minutes: roughly 75-85% extracted, and most of the aromatic compounds with it.
- 5 minutes or more: maximum caffeine, but tannins bittering the cup.

1. **Use lower temperature.** 75°C extracts less caffeine than 90°C. Also produces a less bitter cup.
2. **Shorter brew time.** 1-2 minutes extracts most aromatic compounds; longer extracts more caffeine.
3. **Discard the first 30-second steep.** A "rinse" infusion captures roughly 30% of the caffeine. Pour out and re steep, second cup is lower caffeine.
4. **Choose hojicha or genmaicha.** Both naturally lower caffeine variants.
5. **Choose decaf green tea.** Drops to 2-5mg per cup. More on decaf green here.

## Multiple cups per day

The NHS doesn't set a specific green tea limit beyond the general adult recommendation of staying under 400mg caffeine per day. Practical green tea limits:

- 3-4 cups of standard green tea daily (~120-160mg caffeine total) is fine for most adults.
- 5-6 cups of standard green tea (200-240mg) approaches the level where some sensitive individuals notice.
- Multiple matcha cups daily can quickly exceed sensible limits, be aware that matcha is much higher than steeped green.

- Pregnancy: NHS limit is 200mg/day total caffeine. 4 cups of green tea fits within this with room for other sources. In practical terms, 4-5 cups of standard green tea is roughly 120-200mg, while 1 matcha latte plus 2 cups of green tea is roughly 200-220mg, at or just over the limit. Decaf green tea, at 2-5mg per cup, is effectively unlimited. Green tea also competes mildly with folate absorption, so drink it between meals rather than with iron rich meals. More on pregnancy and tea.

### The "green tea has more caffeine than coffee" myth

You'll see online claims that green tea contains more caffeine than coffee. This is wrong on a per cup basis (coffee is 2-4× higher). Where it's accurate:

- **Per gram of dried leaf vs dried bean.** Tea leaves are slightly higher in caffeine by dry weight than coffee beans. But you use far less tea per cup than coffee per cup.
- **Matcha specifically.** Whole leaf consumption means a full matcha cup can rival a small coffee.

For everyday brewed cups, coffee is significantly higher caffeine than green tea.

### Sleep and timing

Caffeine half life is 5-6 hours. Practical advice:

- Standard green tea before 4pm: fine for most sleepers.
- Standard green tea between 4-6pm: may affect light sleepers.
- After 6pm: switch to hojicha or genmaicha if you still want green tea, or to decaf, rooibos, or chamomile.
- Matcha: avoid after 2pm if caffeine sensitive.

### FAQ

**How much caffeine is in a cup of green tea?** 25-40mg for standard green tea per 200ml cup. Matcha is much higher.

**Does green tea have more caffeine than black tea?** No, black tea has roughly 40-50mg per cup, green tea 25-40mg. Black is higher.

**Is green tea caffeine the same as coffee caffeine?** It is the same molecule, caffeine, but the L theanine that comes with it in tea makes the effect feel smoother.

**Can I drink green tea before bed?** Standard green tea: probably no. Decaf green or genmaicha (lower caffeine): probably fine.

**What's the best low caffeine green tea?** Hojicha (roasted, 15-25mg) or genmaicha (rice blend, 15-25mg). Decaf green for near zero.

**Does matcha have more caffeine than green tea?** Yes, matcha delivers 60-80mg per gram of powder. A 2g matcha latte is 120-160mg. Steeped green is 25-40mg.

*Curator's note: most people overestimate green tea's caffeine load. It's a moderate caffeine drink, gentler than coffee, slightly lower than black tea, and a good fit from morning to mid afternoon. That focused,*

*unflustered feeling is real and one of green tea's underrated strengths. Lee, teas.co.uk, Tunbridge Wells.*

### Reference noted

- EFSA Scientific Opinion on the Safety of Caffeine (2015)
- NHS guidance on caffeine

Compare options in the green tea range, or for evening cups with no caffeine at all, the caffeine-free range and the full tea shop (free UK postage over £35).

**FROM THE CURATOR**

*teas* · Compare green teas by cost per cup alone. Loose leaf mostly wins on that, and supermarket bags can match it.

### Caffeine reference reading

- Green tea (the pillar)
- Green tea caffeine by type
- Caffeine in tea
- Caffeine-free teas
- The full caffeine guide
- Best tea for sleep

### More from the tea wiki

- Green tea
- Black tea
- Oolong tea
- White tea
- Herbal tea
- Caffeine in tea
- How to make tea properly
- Loose leaf vs teabag

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