Tea vs Coffee Caffeine

From the teas.co.uk wiki

> **Tea vs coffee, in summary:** Tea vs coffee caffeine: black tea 40-60mg, espresso 60-80mg, filter 80-120mg. From the UK's independent tea curator. Free £35+ delivery, loyalty + sample.

Last reviewed by the teas.co.uk team in January 2026.

Tea and coffee both deliver caffeine, but they deliver it in measurably different ways. Coffee delivers more caffeine per cup, faster, with a sharper peak and a sharper crash. Tea delivers less caffeine per cup, more slowly, with a smoother peak and a gentler taper, plus L theanine which modulates the caffeine effect into something measurably different in EEG studies. Neither is "better"; they're different tools for different jobs, and many drinkers happily use both across the same day.

This guide covers the actual caffeine differences, the L theanine factor that makes tea caffeine feel different from coffee caffeine, the practical health and lifestyle implications, and how to think about substituting one for the other.

The headline caffeine numbers

Drink	Caffeine per serving	Onset	Peak character
Espresso (single shot, 30ml)	60 to 80mg	15 to 30 minutes	Sharp, intense
Filter coffee (240ml mug)	95 to 165mg	30 to 45 minutes	Strong, lasting
Instant coffee (mug)	60 to 100mg	30 to 45 minutes	Moderate
Cold brew coffee	120 to 200mg	30 to 60 minutes	Strong, very lasting
Strong builders' tea (PG, Yorkshire)	50 to 70mg	30 to 60 minutes	Smooth, sustained
Standard British black tea	40 to 60mg	30 to 60 minutes	Gentle, sustained

Drink	Caffeine per serving	Onset	Peak character
Green tea	20 to 35mg	30 to 60 minutes	Light, very smooth
Matcha (whisked bowl)	60 to 70mg	30 to 60 minutes	Strong sustained focus, no crash
White tea	15 to 30mg	30 to 60 minutes	Very gentle
Decaf tea or coffee	1 to 5mg	Negligible	None

For the family by family tea caffeine map see the ultimate caffeine guide.

The headline difference, in one sentence

A standard mug of filter coffee delivers roughly 2 to 3 times the caffeine of a standard mug of black tea, in a faster acting form, without L theanine to smooth the effect.

That single fact explains almost every practical difference between tea and coffee as caffeine sources. Coffee is the high intensity, fast onset, larger dose option; tea is the moderate intensity, smoother onset, smaller dose option (with the L theanine bonus producing a distinctly different cognitive feel).

The L theanine factor

L theanine is an amino acid found in *Camellia sinensis* (tea) and almost nowhere else in the human diet. It crosses the blood brain barrier and modulates the caffeine effect by:

- Increasing alpha wave activity in the brain (associated with relaxed alertness)
- Reducing the anxiety spike component of caffeine response
- Smoothing the caffeine peak and extending the effective focus window
- Reducing the crash component of caffeine elimination

The combination of caffeine and L theanine in their natural tea ratios produces something measurably different in EEG studies than caffeine alone. The colloquial description is "relaxed focus" rather than "wired alertness", and it's a real, replicable phenomenon, not just marketing.

This is why tea drinkers often describe their morning cup as "just gets me going without the jitters" while coffee drinkers describe theirs as "kicks me into gear". Both are accurate; they're describing different pharmacological combinations producing different subjective experiences.

Coffee contains no L theanine. Synthetic L theanine supplements taken alongside coffee can partially replicate the tea effect, but the natural ratio in tea is the simpler delivery mechanism.

The crash difference

Caffeine has a half life of approximately 5 to 6 hours in most adults (some people metabolise faster, some slower, based on genetic variation). The "crash" comes from a combination of caffeine elimination, adenosine rebound (the neurotransmitter caffeine blocks accumulates while you're drinking), and any blood

sugar effects from accompanying sugar/syrup.

Coffee crashes harder than tea for several reasons:

- The higher dose produces a steeper elimination curve
- The faster onset produces a sharper peak that feels more distinct against the eventual decline
- No L theanine to smooth the experience
- Sugary coffee drinks add a blood sugar crash on top of the caffeine crash

Tea tends to taper rather than crash. The smaller doses, slower onset, and L theanine modulation combine to produce a smoother return to baseline. Heavy daily tea drinkers often report no perceptible crash at all; heavy daily coffee drinkers almost universally report a 3pm slump.

Anxiety and tolerance

For drinkers who experience anxiety from caffeine, tea is almost always the easier option. The smaller dose, slower onset, and L theanine modulation reduce the anxiety spike potential significantly. Many drinkers who can't tolerate more than one coffee a day can comfortably drink 4 to 6 cups of tea without anxiety effects.

Tolerance development also differs. Heavy coffee drinkers develop significant tolerance fairly quickly (a 200mg morning hit becomes baseline within weeks); heavy tea drinkers seem to develop tolerance more slowly, possibly because the L theanine prevents the receptor adaptation that drives coffee tolerance. The practical effect: coffee drinkers often need to escalate doses to maintain effect; tea drinkers can stay at the same intake for years.

Sleep and timing

Caffeine half life of 5 to 6 hours means a 2pm coffee is at half strength at 8pm and still at quarter strength at 1am. For sleep sensitive drinkers, this matters significantly. The general guidance is to avoid caffeine after 2pm if you have any sleep difficulties.

Tea's lower per cup caffeine load gives more flexibility. A 3pm cup of green tea (25mg of caffeine) leaves only 12mg in your system at 9pm, much less likely to affect sleep than 200mg of remaining coffee. For sleep sensitive drinkers who still want an afternoon caffeinated drink, tea is the more sleep friendly option.

For the evening, decaf tea or properly caffeine free herbal teas (chamomile, rooibos, valerian) are the safer choice. See the best tea for sleep guide.

Stomach impact

Coffee is more gastrointestinally aggressive than tea for most drinkers. The combination of acidity, oils, and caffeine concentration can cause heartburn, nausea on an empty stomach, and digestive irritation in sensitive drinkers. Tea is generally easier on the stomach, with the partial exception of very strong builders' brews on a completely empty stomach (the tannins can cause nausea).

For drinkers with reflux, IBS, or stomach sensitivity, tea is usually the better choice. Green tea and white tea are particularly gentle; very strong black tea or matcha on an empty stomach is the closest tea gets to coffee style stomach impact.

A note on health

Both tea and coffee, drunk in moderation, have been studied extensively and the picture is broadly positive for each. In a sentence:

- **Coffee** has the larger body of research, and moderate daily drinking is generally regarded as fine for most adults.
- **Tea** has its own research base, mainly around its polyphenols, with similar reassurance at moderate intake.

The "tea is healthier than coffee" or "coffee is healthier than tea" framing common in wellness journalism is mostly misleading. Both drinks at moderate intake appear to be fine for most adults; neither is dramatically better than the other.

Cost comparison

Tea is dramatically cheaper than coffee on a per cup basis. A daily tea habit costs around £30 to £100 per year depending on quality; a daily coffee habit (espresso machine at home) costs around £150 to £400 per year; a daily coffee shop coffee habit costs £900 to £1,800 per year.

The extreme version: a 240-bag box of supermarket black tea costs around £6 and provides 240 cups, working out to £0.025 per cup. The cheapest decent coffee delivery service works out to around £0.20 per cup (8 times more). A daily coffee shop habit at £4 per cup costs 160 times what supermarket tea costs.

For high volume caffeine consumption, tea is the obvious value choice; for occasional caffeine treats, coffee's higher cost is rarely a meaningful budget consideration.

Switching from coffee to tea

Many drinkers consider switching from coffee to tea for anxiety, sleep, stomach, or cost reasons. The transition typically works best with a gradual approach rather than cold turkey:

1. **Week 1:** replace one daily coffee with strong black tea (matcha or builders' brew); other coffees as usual
2. **Week 2:** replace second coffee with tea; tolerate the modest caffeine reduction
3. **Week 3:** fully switch morning coffee to morning matcha; afternoon to green tea
4. **Week 4:** all caffeine from tea sources; any remaining coffee occasional rather than habitual

Most ex coffee drinkers report initial mild caffeine withdrawal (headache, fatigue) for 3 to 5 days, then full adjustment to the lower caffeine load. The L theanine effect of regular tea consumption typically becomes noticeable within 1 to 2 weeks of consistent intake.

For the strongest tea based caffeine hit comparable to coffee, see the best tea for energy guide.

What we stock for the caffeine question

Browse the black tea range, green tea range, matcha range, and decaf range.

For drinkers wanting tea as caffeine source:

- Yorkshire Tea Original 80 Tea Bags, the strong daily British black tea baseline
- Pukka Organic Supreme Matcha Green, the cleanest sustained focus tea caffeine option
- Teapigs Everyday Brew, whole leaf premium black tea
- Twinings Pure Green Tea, lighter caffeine for afternoon use

For drinkers reducing caffeine but keeping the tea ritual:

- Yorkshire Tea Decaf
- Clipper Organic Decaf Everyday Tea
- Dragonfly Organic Rooibos, naturally caffeine free

The verdict

Tea and coffee are different caffeine delivery systems for different uses. Coffee delivers maximum caffeine intensity in the shortest onset window; tea delivers smoother, longer lasting alertness with the L theanine bonus. Neither is universally "better"; they're appropriate for different situations and different drinkers.

Most drinkers benefit from having both available. Coffee for the days when you need maximum intensity (long drives, deadline crunches, early flights); tea for the everyday baseline and the days when you want sustained focus without the crash. The all or nothing framing common in coffee vs tea wellness content misses the obvious truth: they're complementary tools, and a sensible caffeine strategy uses both as appropriate.

For drinkers experiencing genuine coffee related problems (anxiety, sleep disruption, stomach issues, dependency), the switch to tea as primary caffeine source is one of the highest quality lifestyle interventions available. The L theanine factor alone produces measurable subjective improvements within weeks for most former coffee drinkers.

For the wider context see the full caffeine guide, the best tea for energy guide, the best tea for anxiety guide, the best tea for sleep guide, and the matcha vs green tea comparison.

Studies cited

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

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