Caffeine in Tea

From the teas.co.uk wiki

> **Caffeine in tea, in summary:** Black, green, white, decaf and herbal caffeine as plain ranges, not fixed numbers, plus the levers that move the figure far more than the packet.

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

Caffeine in tea: 40-50mg per cup of black tea, 25-40mg green tea, 15-25mg white tea, 30-50mg oolong, 50-70mg matcha, 2-5mg decaf, 0mg herbal infusions. Tea provides smoother caffeine response than coffee due to L theanine. NHS recommends maximum 400mg daily for adults; 200mg for pregnant women.

Caffeine by tea type

Tea	Caffeine per 200ml cup
Black tea (Yorkshire, English Breakfast)	40-50mg
Strong black tea (long brew)	50-65mg
Earl Grey	40-45mg
Green tea (mainstream)	25-40mg
Sencha (Japanese)	30-50mg
Matcha	50-70mg
White tea (Bai Mu Dan)	15-25mg
Oolong tea	30-50mg
Pu erh	30-45mg
Yerba mate	30-45mg
Decaf tea	2-5mg
Herbal infusions	0mg

Compared to coffee

- Drip coffee (200ml): 80-130mg.
- Espresso (30ml): 60-80mg.
- Strong black tea: 40-50mg.

Coffee has roughly 2-3x more caffeine per cup than tea.

L theanine modulation

L theanine in tea (10-30mg per cup) modulates caffeine response:

- Smoother peak.
- Reduced jitter.
- Relaxed, alert focus.

Tea drinkers report different subjective experience to coffee at equivalent caffeine doses. Real mechanism.

NHS caffeine guidelines

- Adults: max 400mg daily.
- Pregnant women: max 200mg daily.
- Children: avoid caffeinated drinks generally.
- Adolescents: moderate consumption acceptable.

Caffeine half life

5-6 hours typically. Cut caffeine 6-8 hours before bed if sleep sensitive.

Factors affecting caffeine in tea

- Tea type (varies as above).
- Brew time (longer = more caffeine).
- Water temperature (hotter = more extraction).
- Leaf grade (smaller particles extract faster).
- Number of bags / amount of leaf.
- Water volume (smaller cup = more concentrated).

Decaf process

Modern decaf uses CO2 process, preserves polyphenols better than older methods. Residual caffeine 2-5mg per cup.

Caffeine sensitivity

Genetic factors mean some people metabolise caffeine fast (no sleep impact); some slow (small amount affects sleep). Know your sensitivity.

The number is a range you set

The printed figure assumes one set of conditions, and almost nobody brews exactly that. Most of the caffeine extracts in the first thirty seconds and around 95% by four minutes, so beyond that extra time adds

tannin more than caffeine. The biggest swing is cup size: doubling a 150ml teacup to a 300ml mug roughly doubles the dose for the same bag, before any change in leaf, water temperature or steep. Origin shifts the baseline too, an Assam leaf carrying more than a Chinese one, which is why a strong tasting cup is not reliably high nor a delicate one reliably low. The deep treatment is the ultimate caffeine guide; for a base to match, a strong everyday black from Yorkshire Tea, single origin from Hyson, or the full tea shop.

FAQ

Tea caffeine? 40-50mg black; 25-40mg green; 15-25mg white.

Compared to coffee? Tea has roughly half.

L theanine? Smooths caffeine response.

NHS limit? 400mg daily adults; 200mg pregnancy.

Decaf? 2-5mg residual.

Curator's note: caffeine in tea is well defined and modulated by L theanine. The British 4-cup daily routine is well within NHS guidelines and provides sustained focus. Lee, teas.co.uk, Tunbridge Wells.

Related on the wiki: Is tea addictive?

A natural follow-on: the English tea range and loose leaf range.

References cited

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

FROM THE CURATOR

teas · Choose the tea that suits you rather than the one the shelf promotes. Curiosity is the only reliable guide.

Caffeine-side companion reading

- Ultimate caffeine guide
- Caffeine in black tea
- Best tea for sleep

More from the tea wiki

- Green tea
- Black tea
- Oolong tea
- White tea

- Herbal tea
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