Why does tea bubble or foam when you pour it?

From the teas.co.uk wiki

Because pouring drags air into the liquid, and tea is not pure water. It carries natural surface-active compounds (saponins from the leaf, along with proteins and polyphenols) and these gather around each air bubble and hold it together for a few seconds. Pour from a height, or into a mug that already has a swirl in it, and you get a ring of froth that fades while you fetch the milk.

It is completely normal, and it says nothing bad about the tea.

Three different things on the surface

People describe all of them as "foam", but they have different causes and different fixes.

What you see	What it is	What to do
Bubbles that vanish in seconds	Air held briefly by saponins in the tea	Nothing, it is normal
An oily-looking film that dulls the surface	Hard-water scum: calcium reacting with tea compounds	See what is the scum on my tea
A skin on a milky cup	Milk proteins and fat on a reheated or standing drink	Lift it off; brew fresh and add milk at the end
Dense foam that will not go away, with a soapy smell	Detergent residue in the cup	Rinse the cup thoroughly and brew again

Cloudiness through the whole drink is a fourth thing entirely, usually "tea cream" as the drink cools. We cover that in why is my tea cloudy.

Why some brews foam more than others

- **Tea bags with fine particles.** Broken leaf and dust release more material quickly, and give a more vigorous froth than large-leaf tea.
- **A strong brew.** More extracted solids mean more to stabilise the bubbles.
- **A high, fast pour.** Kettle straight into the mug from a distance whips in the most air.
- **Whisking.** Matcha is meant to be beaten until it foams; that jade-green crema is a sign you have whisked it properly. See how to whisk matcha.
- **Hot, fresh water.** A rolling boil brings dissolved gases out of solution as tiny bubbles.

Foam research helps explain the "few seconds" part: the thin liquid films between bubbles drain and rupture, and how long they last depends on what is dissolved in the liquid. Foam film research, Soft Matter Studies comparing teas also show that foaming is not down to saponins alone: several components in the brew play

a part. Comparative tea foam study

Foam is sometimes the point

In Morocco, mint tea is poured from a height precisely to build a foamy head on each glass: the "crown" is the sign of a well-poured tea, and it carries the aroma. Masala chai gets the same treatment when it is pulled between two jugs. If you want more froth in a pot of mint tea, pour the first glass back into the pot and pour again from higher up.

When it is worth a second look

Real detergent foam behaves differently from tea foam: it is denser, it clings to the sides, it lasts minutes rather than seconds, and it smells faintly of washing-up liquid. If you suspect it, tip the cup away, rinse the cup and pot properly in hot water, and brew again in a different vessel. Do not taste it to find out.

Dishwasher rinse aid, a cup washed in a bowl with heavily foamed water, and travel flasks that never dry out are the usual sources.

Common questions

Do bubbles mean my tea is high quality?
No. Fine particles and a fast pour create froth just as readily as a fine loose leaf does.

Do bubbles mean there is soap in my cup?
Rarely. Tea foams on its own. Judge by how long the foam lasts and whether there is a soapy smell.

Should I skim the bubbles off?
No need. They will be gone before the tea is cool enough to drink.

Why does my builder's tea foam more than my green tea?
Everyday bags hold small broken particles that extract quickly, so there is more dissolved material to hold the air. Tetley Original English Breakfast is a typical example of that format.

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