

Why chai boils over, and how to stop it

From the Teas.co.uk wiki

Water boils and bubbles burst. Milk does something different: as it heats, proteins and fat gather at the surface, and the steam bubbles rising through cannot escape. Instead they build a stiff foam that climbs the pan — and the foam needs room the liquid never did. That is why a pan of milky chai that looked half empty is suddenly on the hob. The Max Planck Institute for Dynamics and Self-Organization explains the mechanism in its account of boiling milk. [Why milk boils over](#)

Add tea and spices and it happens faster, because you are stirring and adding solids that give bubbles something to form on.

The five-second fix

1. **Use a pan at least twice the volume of the drink.** Two mugs of chai (about 500ml) wants a litre pan, minimum.
2. **Turn the heat down before it rises, not after.** The moment the surface starts to lift, drop the heat.
3. **Stay with it.** From "nothing happening" to "over the side" is about ten seconds.
4. **Stir.** Stirring breaks the foam and releases trapped steam.
5. **Lift the pan off the ring** if it surges. On an electric hob turning the dial down is not enough — the ring stays hot.

Build the chai so it cannot happen

The traditional order helps, because most of the cooking happens before the milk arrives:

1. Simmer the water with the whole spices for 5 minutes.
2. Add the tea and brew for 2 minutes.
3. **Now** add the milk, and bring it just back to a simmer without letting it boil hard.
4. Strain into mugs.

You get more spice flavour and far less drama. See [how to make masala chai](#) and [how to make chai at home](#).

A ready blend such as [Tea India Ginger Chai](#) removes a step while you get the heat right.

The wooden spoon trick, and other myths

A wooden spoon laid across the pan is often claimed to stop boil-overs. It can pop a few bubbles, and it does nothing about the heat under the pan. Treat it as a party trick, not a method.

Blowing on it works briefly, for the same reason. Turning the heat down works permanently.

If it does boil over

- Turn the heat off first, then move the pan if the handle is safe to grip.
- Let the spill cool before cleaning it; burnt milk lifts more easily after soaking in warm soapy water.
- Wipe the hob before the next use — dried milk scorches and smokes.

Common questions

Why does milk boil over when water does not?

Water bubbles burst at the surface. Milk forms a skin and a foam that traps the steam and lifts.

Does plant milk boil over too?

Yes. Oat and soya both foam, and barista versions foam more, not less.

Does a bigger pan really matter?

More than anything else. Foam needs headroom; a wide, tall pan gives it somewhere to go.

Can I make chai in the microwave?

You can heat the milk, but it is easy to overshoot and it will erupt. A pan you are watching is safer.

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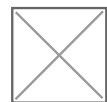
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