

PURPOSE

To determine whether tea causes tooth staining, and how its staining compares with other beverages such as coffee or soda.

To observe how the duration of soaking affects the amount of staining on tooth-like surfaces.

HYPOTHESIS

Tea will cause greater staining than water and possibly more than other common beverages like coffee or soda.

If tea is darker or stronger (more concentrated), then it will create deeper stains on the tooth-like surfaces.



BACKGROUND / RESEARCH

Tea contains **tannins**, which can stick to tooth enamel and cause yellow-brown stains.

Tea often stains **more than soda** and sometimes even more than **coffee**, depending on strength.

Liquid	Staining Level	Notes
Water	No staining	Control
Tea	Strong yellow-brown stain	Darkest stain
Coffee	Medium brown stain	Less than tea
Soft drinks	Light stain	Depends on acid
Tea + Brushing	Reduces stain	Not fully removed

DOES TEA STAIN TEETH

ABSTRACT

This experiment investigates how tea stains tooth-like surfaces and compares the staining with water and other beverages. Eggshells were soaked in different liquids, and the amount of staining was recorded. Results show that tea causes noticeable yellow-brown stains, increasing with time, while water shows little to no staining.

MATERIALS AND PROCEDURES

Materials :

- Eggshells (safe enamel substitute)
- Black tea (standard brew strength)
- Coffee, soda, juice (optional comparison liquids)



- Water (control)
- Clear cups/containers
- Timer
- Color chart or color-measuring phone app
- Gloves, labels, notebook

Procedure (Short Version):

- ✓ Clean and label eggshell samples.
- ✓ Prepare liquids: tea, coffee, soda, juice, and water.
- ✓ Soak each eggshell in its liquid for equal time (e.g., 1 hour).
- ✓ Remove samples, dry them, and record color changes.
- ✓ Optional: Brush some samples with toothpaste and measure stain removal.

RESULTS & DISCUSSION

Tea produced **visible yellow-brown staining**, stronger than soda and often stronger than coffee.

Water produced **little to no staining**.

CONCLUSION

Summarize whether tea caused significant staining compared to the control and whether your hypothesis was supported.

The experiment suggests that people who regularly drink tea may need better oral hygiene or professional cleaning to prevent long-term discoloration.



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