

FLUORIDE CONTENT OF UK RETAIL TEA: IMPACT OF BREW TIME ON TEAS OF DIFFERENT VALUE

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1 WHY IS FLUORIDE IMPORTANT?

According to the European Commission official list of health claims, fluoride “contributes to the maintenance of tooth mineralisation,” thus it helps to prevent dental disease. A cup of tea could use this health claim if it provided 15% RDA, i.e. 0.5mg fluoride, per 100ml as consumed.

DID YOU KNOW

A 240ML SERVING OF REGULAR ‘BLACK’ TEA CONTAINS AROUND 1.2MG FLUORIDE?

2 TEA IS A SOURCE OF FLUORIDE

Our previous research¹ shows that black tea makes a contribution to UK fluoride intakes. Four servings of tea daily would meet the RDA for fluoride but remain within safe upper levels set by the European Food Safety Authority.

3 METHODS

Three brands of retail black tea were selected to represent economy, mid-range and premium products. Infused fluoride was measured by brewing one tea bag in 240ml of freshly boiled de-ionized water in a standard manner for the required period.

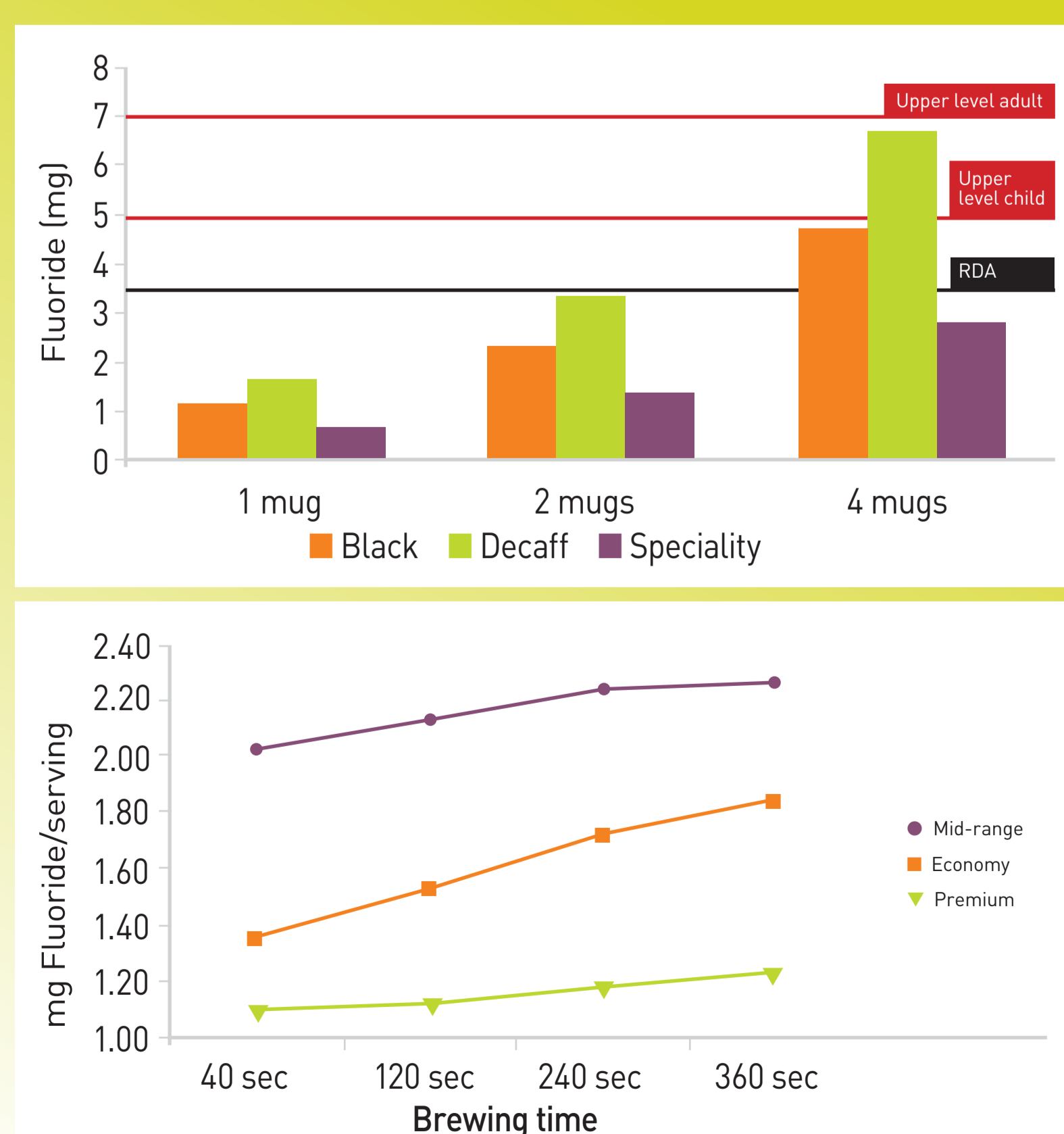
Fluoride content measured using ion selective electrode. The entire process was carried out in triplicate for each brand and each brewing time of 40, 120, 240 and 360 seconds. Between-subjects and repeated ANOVA were used to test for significant differences ($p < 0.05$).

5 INTERESTING POINTS

- Fluoride content was significantly different at 40 sec with the highest value seen in the mid-range tea.
- Fluoride content significantly increased with brewing time for all three individual brands.
- The rise in fluoride content between 40 sec and 360 sec was greatest in the economy tea (+2.03 mg/L) compared with the premium tea (+0.53 mg/L).

4 RESULTS

Fluoride content mg per 240ml serving of brewed tea is shown below:



6 CONCLUSIONS

- Tea is an important source of fluoride which adds dental health benefits to the well-known hydration benefits.²
- Fluoride content is not always highest in economy teas, as was claimed previously.³
- Fluoride content increases with brewing time.
- Increasing tea intakes from 2 to 4 servings daily would meet the fluoride RDA.

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1. Ruxton CHS & Bond TJ (2015) Proc Nutr Soc 74(OCE1): E84. 2. Ruxton CH & Hart VA (2011) Br J Nutr 106: 588-95. 3. Chan L et al. (2013) Food Res Int 51: 564-570.

