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**January 2015**

**SORTING FACT FROM FICTION: Fluoride in tea is good for you**

Current tea consumption is unlikely to provide fluoride intakes that exceed safe limits for adults and children according to a new study [[1]](#footnote-1) just presented to the Nutrition Society by Dr Carrie Ruxton, independent public health nutritionist.

Commenting on the research study, author and member of the Tea Advisory Panel (TAP), Dr Carrie Ruxton notes: “Current tea intakes do not provide enough fluoride to meet the Recommended Daily Amount (RDA) for this mineral, and the potential dental health benefits of fluoride cannot be accessed unless tea consumption increases to 3-4 servings/day from the current intake of 1-2 servings a day.

“This latest study helps to put the record straight in the context of a 2013 study that measured the fluoride content of 38 tea bags and concluded that economy versions of tea represented a risk to dental and skeletal health. [[2]](#footnote-2) These conclusions were somewhat surprising given that official bodies view fluoride as a means to deliver dental health benefits when recommended amounts are consumed. Public Health England (PHE), for example, is clear about the benefits of water fluoridation and recommends that the practice is extended.”

Dr Tim Bond from TAP adds: “The 2013 study was also flawed in several respects. Firstly, tea was brewed for 2 minutes – longer than the typical brewing time of 30-40 seconds. Secondly, 2g of dry tea was added to 100ml of water making the infusion more concentrated that a typical tea bag in a cup or mug. Thirdly, the study compared the fluoride intake with the US Dietary Reference Intake rather than the EU Safe Upper Level.

“This latest study replicated the situation of a typical cup or mug of tea in that a single tea bag was added to 240ml of boiling water and brewed for 40 seconds. Tea bags from 49 retail brands were analysed.

“Average fluoride content of black blended tea in this study was 4.91mg/litre and similar to the findings of the 2013 study. However, according to the 2014 NDNS figures, average tea consumption in the UK is 395ml daily and intakes at the safe upper level of intake are 1155ml daily. Fluoride intakes from tea (which is estimated to provide 70% of the UK’s fluoride intake) will likely be lower than the safe upper level of 7mg daily (5mg in children) even among those people with intakes of tea at the higher end of the population. Moreover, this latest study shows that current average intakes of tea do not provide the RDA for fluoride suggesting that tea intake should increase to access the benefits of fluoride for dental health.”

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**The Tea Advisory Panel:** The Tea Advisory Panel is supported by an unrestricted educational grant from the **UK TEA COUNCIL**, the trade association for the UK tea industry. The Panel has been created to provide media with impartial information regarding the health benefits of tea. Panel members include nutritionists; dieticians and doctors. For further information please call **0207 7052 8989.**

**Table One**: Fluoride recommendations

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| Adequate Intakes (UK[[3]](#endnote-1) and EU[[4]](#endnote-2)) | 0.05 mg/kg BW:Based on average BW[[5]](#endnote-3), this is equivalent to:84kg male = 4.2 mg/d71 kg female = 3.6 mg/d24 kg child = 1.2 mg/d |
| Recommended Daily Allowance[[6]](#endnote-4) | 3.5 mg/d |
| Safe Upper Levels (EU[[7]](#endnote-5)) | Children 1-8 years 0.1 mg/kg BW:Based on average BW, this is equivalent to 1.5 mg/d for children aged 1-3 years, and 2.5 mg/d for children aged 4-8 years.Children 9-14 years = 5 mg/dAdults = 7 mg/d |

Key: BW, body weight; d, day. Note: AI for pregnant women relate to their pre-pregnancy BW.

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1. Ruxton, CHS and Bond T. Fluoride content of retail tea bags and estimates of daily fluoride consumption based on typical tea drinking habits in UK adults and children. *Public Health Nutrition* (in press) [↑](#footnote-ref-1)
2. Chan L, Mehra A & Saikat S (2013) Human exposure assessment

of fluoride from tea (Camellia sinensis L.): A UK based issue? .

*Food Res Int* **51,** 564-570. [↑](#footnote-ref-2)
3. Department of Health (1991) Report on Health and Social Subjects: 41. Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. HMSO: London. [↑](#endnote-ref-1)
4. European Food Safety Authority (EFSA) 2013) Scientific Opinion on Dietary Reference Values for fluoride. EFSA Journal, 11: 3332 (46 pages). [↑](#endnote-ref-2)
5. Health Survey for England (2012) Chapter 10: Adult anthropometric measures, overweight and obesity. Available at: <http://www.hscic.gov.uk/catalogue/PUB13218/HSE2012-Ch10-Adult-BMI.pdf> [↑](#endnote-ref-3)
6. European Parliament and Council (2008) Commission Directive 2008/100/EC

of 28 October 2008 amending Council Directive 90/496/EEC on nutrition labelling for foodstuffs as regards recommended daily allowances, energy conversion factors and definitions. Official Journal of the European Union 285/9. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:285:0009:0012:EN:PDF> [↑](#endnote-ref-4)
7. European Food Safety Authority (2006) Opinion of the Scientific Panel on Dietetic Products, Nutrition and Allergies on a request from the Commission related to the Tolerable Upper Intake Level of Fluoride (Request N° EFSA-Q-2003-018). The EFSA Journal, 192: 1-65. [↑](#endnote-ref-5)