

25<sup>th</sup> February 2014

Duncan Selbie  
Chief Executive  
Public Health England  
Wellington House, 133-155 Waterloo Road  
London SE1 8UG

Dear Mr Selbie

**Concentration of fluoride in treated water in artificially fluoridated areas**

As a follow-up to my letter dated 14<sup>th</sup> February, I'm sending you the link to a recently published *Lancet Neurol* article:

<http://download.thelancet.com/pdfs/journals/laneur/PIIS1474442213702783.pdf?id=eaaSHLpQ3RqRNfSS3qZqu>

Ref: Grandjean, P. and P.J. Landrigan (2014). 'Neurobehavioural effects of developmental toxicity'. *Lancet Neurol* 2014; 13: 330-38.

A quick search for the word 'fluoride' will show that fluoride is considered by the researchers to be a developmental neurotoxin. This conclusion was reached following the conclusion of their systematic review.

Yours sincerely

Joy Warren, BSc. (Hons) Environmental Science  
Coordinator, West Midlands Against Fluoridation

cc. Geoffrey Robinson, MP, Coventry West





Public Health  
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Ms Joy Warren

27 March 2014

Dear Ms Warren

**Concentration of Fluoride in treated water in artificially fluoridated areas**

Thank you for your letters of 16 and 25 February.

Despite reductions in decay in England overall in recent years, there remain significant inequalities in oral health between communities. Tooth decay remains a public health problem, resulting in pain and distress and is a common cause of hospital admission among children. Communities receiving fluoridated water supplies show lower levels of tooth decay than comparable communities without this measure. Most water supplies contain some fluoride naturally and there are areas of England where the water supplies naturally contain fluoride at levels seen in artificial schemes. Large parts of the United States and Australia are covered by schemes and new schemes have been recently introduced in some Australian states.

Some areas of the country have natural background levels of fluoride at around the target level of 1 part fluoride per million of water for fluoridation schemes. The maximum level of fluoride allowed by European regulation is 1.5 parts of fluoride per million of water. There is no credible scientific evidence that water fluoridation at 1 part per million is a cause of general ill health.

Turning to the specific points you raise, I note that you wish to see all water fluoridation ceased. Regarding the target level of fluoride in water to be achieved by schemes there is no evidence that there are unacceptable levels of fluorosis in populations served by these schemes. Recent research that used new methodology to give more valid measures of fluorosis have reconfirmed this view, though PHE has commissioned new research to allow a further development of the methodology to be used. No specific committee exists to consider this matter as it is part of regular on-going business for us.



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Both fluoridated drinking water and toothpaste provide important and complementary benefits. The concentration of fluoride in toothpaste is far higher than that seen in drinking water and professional recommendations are that the amount of toothpaste put on a young child's toothbrush should be limited. Supervised toothbrushing initiatives using fluoride toothpaste will play a role where there are concerns over decay levels in schoolchildren, but such schemes do not reach all groups of society. Water fluoridation however reaches all age groups at a cost of less than 40 pence per person per year.

Regarding the British National Formulary, this makes recommendations regarding fluoride supplements in the form of drops or tablets but not the content of fluoride in water. Water fluoridation is governed by the Water Industry Act and by industry codes of practice.

The paper in the Lancet that you mention in your letter of 25 February cites a single review paper by Choi and co-workers, published in 2012. The authors of that paper refer to a possible link between fluoride and neurotoxicity associated with far higher levels of fluoride exposure than allowed by EU regulations. Furthermore they reported the presence of deficiencies in the studies they reviewed, limiting the conclusions which could be drawn. The European Commission's Scientific Committee on Health and Environmental Risks (SCHER) has concluded that fluoride intake from drinking water at the level occurring in the EU does not appear to hamper children's neurodevelopment and IQ levels. Given those circumstances, Public Health England considers that this limited research does not demonstrate a risk to the neurodevelopment of children in England from levels of fluoride in water seen either in fluoridation schemes or naturally present.

Public Health England continues to believe that water fluoridation is a safe and effective public health measure.

Best wishes

Yours sincerely

A handwritten signature in black ink, appearing to read 'D Selbie'.

Duncan Selbie  
Chief Executive

14/02/0024

RECEIVED 18 FEB 2014

16<sup>th</sup> February 2014

Duncan Selbie  
Chief Executive  
Public Health England  
Wellington House, 133-155 Waterloo Road  
London SE1 8UG

Dear Mr Selbie

**Concentration of fluoride in treated water in artificially fluoridated areas**

I have recently submitted two Freedom of Information requests to the DH and to your organisation in which I asked if the issue of a lower concentration of 0.7mg artificial fluoride per litre of treated water had ever been added to a committee agenda at either the DH or at the PHE.

I received two replies in the negative.

In both the Republic of Ireland and in the USA, the concentration of fluoride has now been reduced to 0.7mg fluoride per litre of water in recognition of the alarming number of people who have dental fluorosis. Fluorosis in permanent teeth is caused by excess fluoride in a toddler's and young child's diet and environment. In 1999, a UK government spokesperson<sup>1</sup> admitted that "fluorosis is a manifestation of systemic toxicity". The EPA (USA) has classified fluoride as being a developmental neurotoxin.<sup>2</sup> The British National Formulary entry in respect of fluoride supplementation recommends that babies under 6 months should be exposed to no more than 0.3mg fluoride per day and that children under 3 years of age should be exposed to no more than 0.55mg fluoride per day. We now learn that the British Fluoridation Society has admitted that the incorporation of fluoride into developing teeth (i.e. the systemic theory) is only a minor intervention and that it is more valuable to have fluoride in our saliva.<sup>3</sup>

If the main action of fluoride on our teeth is after it enters the buccal cavity via the salivary ducts, this implies that the action of fluoride on dental caries is topical.<sup>4</sup> However, we don't swallow our fluoridated toothpaste just so that it can be in our saliva. No – we brush it on our teeth. So, why swallow fluoride? We are warned, by the way, against swallowing our fluoridated toothpaste, so why are we urged to swallow fluoridated tap water?

However, even this saliva theory is flawed. From a paper by Richard Sauerheber,<sup>5</sup> we note that where artificial fluoride is present in our drinking water at a concentration of 1mg fluoride/litre of water, a miniscule 0.02mg fluoride is found in 1 litre of saliva. This concentration of fluoride is unlikely to have a profound effect on our dental hygiene. Moreover, we produce very little saliva when we're sleeping, and during the day much is swallowed without bathing the anterior surfaces of the teeth. It's only when we are eating that saliva makes contact with all surfaces of our teeth.

The cost of administering the water fluoridation programme is excessive when we look at the tiny total amount of fluoride in the saliva of disadvantaged children for whose sakes the fluoridation programme

exists. Indeed the 0.02mg fluoride/litre of saliva could be achieved by ensuring that disadvantaged infants, toddlers and young children have their teeth cleaned with fluoridated toothpaste in nursery and at primary schools' breakfast clubs. It is clear that even if children spit out most of their toothpaste they are going to swallow some saliva which will contain more fluoride than is found in drinking water which contains fluoride at 1ppm. (Children's fluoridated toothpaste contains 1000ppm although I have seen some brands which contain 1450ppm fluoride and which manufacturers market for young children.)

Although my main intention in writing to you is to ask that you add an item to a committee agenda so that a reduction in concentration of fluoride to 0.7mg fluoride/litre of water can be deliberated, my main aim is to have fluoride stopped altogether since nurseries and breakfast clubs can reach some of the disadvantaged children when toothbrushing can be introduced into a child's hygiene routine. We can already see the great success of the Childsmile programme in Glasgow<sup>6</sup> and surely this is the way forward since if disadvantaged children brush their teeth when young, they will continue to do so when adult and their children will be taught to do the same and so on down the generations.

The small number of disadvantaged parents whose children don't attend a nursery can be reached by health visitors, or at post-natal clinics and mother and baby clubs when free samples of toothbrushes and infant toothpaste can be handed out as part of a dental hygiene education module. The huge amount of money spent on the fluoridation programme could be better targetted: it does not seem credible that 6 million people need to be fluoridated for the sake of a tiny percentage of disadvantaged children who, up till now, have fallen through the net.

I hope that you will add this issue to a committee agenda. If you do not intend adding this issue to an agenda of one of your committees, I would be grateful if you could reply to this letter giving reasons why you do not feel that this issue is appropriate for deliberation by PHE.

Yours sincerely

Joy Warren, BSc. (Hons) Environmental Science  
Coordinator, West Midlands Against Fluoridation

cc. Geoffrey Robinson, MP, Coventry West

1. Hansard 2014/99: WA 158.
2. <http://www.epa.gov/ncct/toxcast/files/summit/48P%20Mundy%20TDAS.pdf> ([http://www.bfsweb.org/facts/dental\\_benefits/howfworks.htm](http://www.bfsweb.org/facts/dental_benefits/howfworks.htm)) , third column, upper pane, middle column.
3. [www.bfsweb.org/facts/dental\\_benefits/howfworks.htm](http://www.bfsweb.org/facts/dental_benefits/howfworks.htm) .
4. The debate over whether fluoride as a topical application can prevent dental caries can wait for another day.)
5. Sauerheber, R. (2013). 'Physiologic Conditions Affect Toxicity of Ingested Industrial Fluoride.' *Journal of Environmental and Public Health*, Volume 2013 (2013).
6. <http://www.child-smile.org.uk/professionals/about-childsmile.aspx> .