Author's response to reviews

Title: Evaluating the use of Fluorescent Imaging for the Quantification of Dental Fluorosis.

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Author's response to reviews: see over
Dear Sir/Madam,

Re: Evaluating the use of Fluorescent Imaging for the Quantification of Dental Fluorosis.

The authors wish to thank the reviewers for their comments. Changes have been made to the manuscript and are highlighted in red.

In addition, the temporary citation for BMC Oral Health Manuscript ID:1059398623581996 has now been replaced with a resulting change in manuscript reference numbering.

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<th>Reviewer 1 Comments</th>
<th>Authors’ comments</th>
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<td>(1) The QLF image of typical dental fluorosis should be given in the paper to visualize the readers and the definition of Areach, #Fch and #Qch from the images is necessary to understand deeply the parameters.</td>
<td>(1) The text has been amended to include a section outlining the QLF metrics, as well as the inclusion of an additional figure (Figure 3) the text now reads: Typical images generated for a subject with mild fluorosis (TF2) are illustrated in Figure 3. Areas of the teeth that are seen as bright green under QLF depict regions of sound, or unaffected enamel. Where there has been a disturbance in enamel mineralization (such as fluorosis) the resulting areas of hypomineralization results in a reduction, or loss, or fluorescence and is seen as darker areas when viewed with QLF. Images captured by QLF can be analysed using software algorithms to produce metrics relating to the fraction of tooth area considered to be fluorotic (Area_f), the average fluorescence loss of tooth area considered to be fluorotic (AF_f) and the average fluorescence loss over</td>
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(2) The experimental setup shown in Figure 2, the components of detector, light source and sample should be labeled. And another question is that QLF technology is developed by Inspektor in Netherlands, and it is a commercial medical product. It is wondering if the results reported based QLF in the paper is based on the self-developed experimental setup shown in figure 2. If so, how to guarantee the universality of self-developed technology.

(3) Figure 4 depicted the relationship of specificity and sensitivity, please detailed explain the significance of the figure and label the every curve.

(4) The images in the paper should be improved according to the Journal.

**Reviewer 2 Comments:**

**Discretionary Revisions**

The aim of this study was to evaluate the use of fluorescent imaging for the quantification of dental fluorosis in an epidemiological survey and to determine the level of association with remote photographic scoring using a standard clinical index. This was a study of experts in this field. The results of this study suggest that QLF has the ability to reliably quantify fluorosis in an epidemiological setting, albeit assisted by clinical diagnosis.

The authors would need to have the conclusions of the abstract to be in the article conclusions to include "Despite confounding factors the fluorescence imaging system may provide a useful objective, blinded system for the assessment of enamel fluorosis when used adjunctively with photographic scoring."

**Authors’ comments**

As requested by the reviewer, the conclusions from the abstract are now accurately reflected in the body text of the manuscript.
Kind regards

Yours sincerely,

MICHAEL G MCGRADY