The neglect of global oral health: symptoms and solutions

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A new caries index – PUFA

Dental indices must not be CAST in stone


(Comment to Frencken JE, de Amorim RG, Faber J, Leal SC. The Caries Assessment Spectrum and Treatment (CAST) index: rational and development. Int Dent J 2011 61: 117-23)
Dental indices must not be cast in stone

The publication of the article in the International Dental Journal by Frencken et al.1 describing the Caries Assessment Spectrum and Treatment (CAST) index is a timely reminder that a reassessment of indices used for the recording of stages of the dental caries process is crucial. The inadequacies of the DMFT index to cover all clinical stages of dental decay are well known and led to the development of the ICDAS2,3 which emphasizes the recording of initial lesions of the caries process, while for the advanced stages of this process, the PUFA index was developed to record the consequences of untreated dental decay4.

As authors of the PUFA index we wish to respond to certain issues raised by Frencken et al.1 and comment on their claims made in relation to the PUFA index.

We were pleased that the authors of the CAST index found that for the PUFA index “the presentation of results is straightforward, using prevalence and mean scores for the individual components and the combined components”. They claim, however, that when the PUFA index is used with the ICDAS, the reporting of results was “difficult to present in words, figures and tables in a simple and easy-to-read manner”. Since Frencken et al. fail to detail the exact nature of the problems encountered when reporting results from the two indices, we assume that they are more related to the complexity of the ICDAS than with the PUFA index.

We find the proposition to incorporate an abridged PUFA index into a new CAST index, where the PUFA score for pulpal involvement (P/p) is represented on an apparently hierarchical score by code 6, the presence of an abscess (A/a) or fistula (F/f) merged into a single code 7, and ulceration (U/u) eliminated, highly questionable. We wish to emphasize that the PUFA index was never designed to be integrated into another caries index or to be used in a hierarchical manner, but was to be used separately to complement existing caries indices. We see no rationale behind the collapsing of A/a (abscess) and F/f (fistula) into one code and pulpal involvement into another code since the magnitude of infection and accompanying pain and discomfort vary between the categories and even within a category.

Moreover, the description of the CAST index is not accompanied with details of how the results should be reported and interpreted. This seems strange since the justification for proposing the CAST index was the difficulty in presenting the results from application of the ICDAS and PUFA indices. In addition, we are concerned that the CAST index is proposed on the basis of a single survey carried out in Brazil where the authors unfortunately do not provide any substantial statistical detail. We believe that such far-reaching suggestions are premature and lack evidence, particularly since the authors themselves state that “the CAST
index has not been validated, nor has reliability testing been done, nor have data been presented using this index"¹.

Although still young, the PUFA index has already been used in a number of surveys, its validity tested and an excellent inter- and intra examiner reliability been demonstrated. It is also our understanding also that the FDI World Dental Federation is currently attempting to design a comprehensive caries matrix to cover all stages of decay where the principles of the PUFA index will feature.

Decades of conducting oral health surveys using the DMFT index have not helped in a significant international public health prioritization of dental decay. The presentation of data concerning odontogenic infections and their consequences using the PUFA index, however, has been a very strong tool to convince health decision makers to invest in effective and appropriate oral health promotion⁵. We, once again, strongly urge all involved in epidemiological oral health surveys to ensure that their choice of indices and the results obtained respond to the needs of informed health policy making by including the PUFA index as originally presented.
References


