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Development of an Index for the Prevalence of Root Caries: Discussion of Dr. Katz' Presentation

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When I was asked to respond to Dr. Katz' paper on the development of an index for the prevalence of root caries, I was most pleased to accept for reasons of: (1) my own involvement as an investigator with the subject; (2) my recollection as a former clinical instructor who, years ago, found himself telling dental students that the cervical radiolucency found on a radiograph was usually caused by anatomic configuration rather than by a disease process; and (3) my present awareness as a dental school administrator that the demographic characteristics of the patients in our teaching clinics are changing in very significant ways. It will be through the prisms provided by that background that the following observations on Dr. Katz' presentation will be made.

To begin with, I found Dr. Katz' statement regarding the possibility that root caries may be the dominant active dental decay process in adults to be very interesting. Whether or not it is true, it is a dramatic way of indicating that the emergence of root caries as a public health problem is an important sequela to the demographic changes and the changes in dental health care practices which have occurred in recent years. Certainly, his association of root caries with periodontal disease is appropriate and consistent with the positive correlation between both disease processes and age. Employing the Root Caries Index (RCI) which he developed, Dr. Katz has supported this perception through his analysis of data previously collected by Hazen *et al.*¹, in which he demonstrated clearly the importance of acquiring more knowledge and understanding of root caries. That analysis, reported in 1982², revealed that the average subjects in Hazen's study entered their thirties with only one out of 100 of their surfaces having been attacked by root caries, while they entered their sixties with better than one out of five of their surfaces with recession having been so affected. The analysis also showed that there was an 18-fold increase in the average number of surfaces with root caries per subject between ages 20 and 64.

I agree with the position taken by Dr. Katz that descriptive, analytical, and experimental epidemiological studies are needed in order to provide data that are essential for a more thorough understanding of root caries and the development of appropriate preventive and treatment modalities than exist at the present time. To that end, his focus on the definition, measurement, recording, and reporting of root caries is a necessary first step.

One comment that I would like to make regarding the author's proposed description of visual-tactile criteria for epidemiological studies concerns his inclusion of inactive lesions among those which would be recorded by an examiner(s). It seems to me that, with the importance of establishing and maintaining the examiner reliability that is critical to the success of epidemiological studies, it is not helpful to introduce an element which could seriously erode that reliability. Unless it is important to identify as many root caries lesions as possible in order to make statistical analysis valid, the well-accepted concept that it does not create a serious problem systematically to omit questionable lesions would appear to apply. Given the focus of the Root Caries Index on surfaces and subjects *at risk*, it would seem that a sufficient number of frank lesions could be identified to produce meaningful results, since the denominator is smaller than would otherwise be the case. Similar logic could be applied to the recording of treated root caries lesions. If one were not to include in the recorded data those treated lesions which do not leave an easily identifiable restoration (e.g., amalgam, gold, composite, etc.), there would result an under-counting of treated root caries, but the validity of the data that depends on examiner reliability would be protected.

I was intrigued by Dr. Katz' suggestion that a more sensitive instrument than the standard dental explorer might some day be developed in order to provide a more objective and quantitative technique for the detection of caries lesions, coronal and root surface, than exists at present. His reference to the far-more-limited range of tactile sensation between sound and carious cementum or

dentin than is the case on the crown of the tooth would certainly support the idea that perhaps a more sensitive diagnostic device or method would be desirable.

With regard to Dr. Katz' suggestion that pressure to arrive at a universally accepted index, which employs the "best" definition of root caries and the "best" instruments, through the mechanism of requiring 90% or better intra- and inter-examiner reliability scores when calibrated, I wish him well. As somebody who has not been involved in the examination process itself in recent years, I do not wish to express an opinion regarding the feasibility of employing this tactic, but I agree that it could have the effect of reducing the time frame between the development of an index and its universal acceptance.

The Root Caries Index (RCI) described by Dr. Katz is, in my opinion, an important contribution to the methodology which will be required for the effective development of a body of knowledge about root caries. It is particularly useful, I believe, that the index is designed to measure a true attack rate for this disease process, since it includes only those teeth which are truly at risk — namely, those with gingival recession. His exclusion of teeth that might have root caries within periodontal pockets would appear appropriate, especially given the obvious negative implications which their inclusion would have on examiner reliability.

A start has been made in the search for a universally accepted method for measuring root caries in the development of the Root Caries Index. I look forward to its application in the field by workers who are interested in this problem. It is particularly encouraging, in fact, to see that the various elements being considered at this Conference on Caries Clinical Trials are increasingly being applied to the study of root caries. Given the considerable improvements in methodology and the substantially greater knowledge base that exists today than was the case even as recently as the 1960's, it seems to me that the prospects for a relatively rapid closure of present-day gaps in the understanding and treatment of root caries are good. Dr. Katz is to be complimented for the contributions that he has made, and should continue to make, in this regard.

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