January 26, 1942.

Dr. T. H. Rider,
Pepsodent,
6901 West 65th Street,
Chicago, Illinois.

Dear Dr. Rider:

The question you have raised concerning contamination of tooth paste with lead through the use of lead tubes has come up through a number of other avenues. Tube preparations of a rather wide variety are used, as you know, and there has been an extensive change in the materials available for making such tubes. In addition, other types of containers have been altered, and lead containing materials are either in use or are being contemplated for use for the packaging of a number of commodities which only a short time ago would never have been considered for distribution in this manner. For these reasons, it is not easy to give an intelligent answer to your question. Tooth paste is only one of a rather large number of materials which are likely to contain more lead than they have in the past. Therefore, any hygienic consideration of this problem involves taking the whole picture into account rather than any one article. The question from the public health point of view is how much may the total lead intake of the average citizen be per day. The importance of the contribution made by any one article will depend, therefore, upon whether that contribution is unavoidable and whether a certain elasticity can be permitted in view of a generally satisfactory overall picture. Consequently, I should say that it is not a question of what would be the tolerable limit for lead in a dentifrice. We know, of course, that little of the dentifrice is swallowed. Therefore, the problem is not too acute. On the other hand, some of it may be swallowed, and since it is introduced into the mouth, its lead content should be as little as possible. Most natural materials contain lead, and it would not be any special case if a dentifrice were to contain quantities of

lead up to 1/10th of a part per million. If it is possible to prevent it, I should feel that you were wise not to have quantities of lead in excess of this.

From what I have said above, I think you will see that, in my opinion, it would be quite impossible to establish a safe lead tolerance for tooth pastes. We are working intensively on the larger problem of the total lead tolerance. I can see no experimental way in which you could determine what quantities of lead will be absorbed from the use of a dentifrice containing a given concentration of lead. You would have to consider the possibility of a misguided or ignorant person, or a small child consuming the contents of the tube. The lead intake could be anything between this and zero, and the absorption would be difficult to determine by any experimental method, since the quantities of lead taken in daily in ordinary food would mask the quantities involved in the case of tooth paste.

We could work with you in a cooperative fashion in determining the degree of contamination of tooth paste as the result of the use of various types of containers. We could also quote you a price on the actual cost of such analyses. At the moment, lead analyses cost us in the neighborhood of $5.00 per analysis. We could also work with some assistant whom you might assign to the job of doing analyses for you in your own laboratory, and we would be glad to give such a man the benefit of our knowledge and experience in this field. I mention this for the reason that we are becoming more and more involved in urgent work, and we may find it necessary to eliminate unnecessary items of work which are not of immediate urgency.

Finally, and despite all I have said above, I do not think that the slight contamination of tooth paste with lead is a very significant hygienic problem, since I do not believe that lead absorption would occur to any appreciable degree from the limited contamination of tooth pastes. On the other hand, I think the problem is bound to give you trouble, and if you could avoid this difficulty by any reasonable means, you would be well advised to do so.

Cordially yours,

Robert A. Kehoe, M. D.

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