

December 6, 1938

Dr. E. C. Dodds
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The Middlesex Hospital
London, W. 1
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Dear Doctor Dodds:-

Please accept my thanks for the information as to your methods of handling the study of calcium and phosphorous metabolism. It will be very helpful to us. Meanwhile we have obtained a series of results by merely taking aliquots of samples obtained on a subject who is ingesting a known quantity of lead daily. I am sending herewith the complete data for your examination. In view of your experience it would be invaluable to have your detailed criticism, and I trust you will not spare us in any way. I shall give you the necessary details of our procedures.

The subjects of our lead experiments are permitted to do as they like, except for the avoidance of occupational lead exposure, and to eat and drink as they like, but they keep a more or less detailed diary of their activities. (It is desirable that they conduct themselves in a wholly normal and unconfined manner, so far as possible, and therefore they are given essentially complete freedom.) Duplicate samples of food and beverages are obtained by the subject at the time of their consumption. The beverages are duplicated by accurate measure. The food, on the other hand, is not weighed, but estimated by spoonsfull, slices etc. Both food and beverages are combined in 24-hour samples, ashed in total, and analysed.

This method of handling the food is, of course, questionable, since slight differences in the weight of the samples eaten and collected for analysis may introduce errors which do not equalize themselves over a period of time. In this case of lead, it is probably as satisfactory on the whole as any method which could be used, and it probably gives rise to a smaller error than would be occasioned by grinding and mixing the food, then taking an aliquot for analysis.

I wonder, therefore, whether we should arrange merely to collect exactly equivalent weights

of the respective food materials, or whether we should go to still greater lengths of precision in sampling. Anything we do will be expensive, and while that is not an insurmountable obstacle, it is a limiting factor to the scope of our work.

As to methods of analysis, the appended results were obtained in the case of calcium by the method described by Peters and Van Slyke in Quantitative Clinical Chemistry - Vol. 2, p. 763 (1932); in the case of phosphorous in feces and food, by the phosphomolybdate titration method given in "Methods of Analysis of A.O.A.C. 4th Ed. p. 20 (1935), and in the urine by the Uranyl Acetate method described in Peters and Van Slyke (as above) p. 861. The latter method was the more rapid and satisfactory except that in the feces and food the end-point was somewhat indistinct.

No doubt, by this time, Smith has returned to you with the results of his visit. I believe the trip was useful to him and I sincerely hope you will find that it was. I shall be interested in having your reaction. We were pleased to have him, and everyone liked him very much. I hope it was all pleasant and profitable to him. As you probably realize fully, it was not easy to know just what was going on in his mind. Please convey to him my kindest regards.

It is so near the Christmas season that I cannot close without expressing greetings and best wishes for a fine Christmas to yourself and Mrs. Dodds.

Sincerely yours,

RAK:is

Robert A. Kehoe, M.D.