Summit, N. J.
March 5, 1941

Dr. Jacob Cholak
Kettering Laboratory of
Applied Physiology
University of Cincinnati
Cincinnati, Ohio

Dear Dr. Cholak:

Perhaps you recall our discussion at the Cincinnati, A. C. S. meetings, about my work with Dr. Crandall at the University of Tennessee, on the effect of pectin on lead toxicity.

We have completed the study, using Radium as an indicator, and found pectin effective in preventing lead absorption.

Though I have left Tennessee to work at General Foods Research Laboratories, I am still much interested in making industrial application of this work.

In the course of your study, I am wondering if you gathered information on the various industries which present a so called "Lead Hazard" to workman, and what number of men are involved in the possible chronic lead toxicity problem.

If you could direct me to the source of such information it would be a help to me in planning the next stage of the work. If you have any suggestions as to what industrial connections might be cooperative or receptive to suggestions or clinical trials, I shall appreciate them very much.

Respectfully yours,

Harvey K. Murer

Harvey K. Murer

HKM-cm

Address:
15 New England Ave.,
Apt. 9-A
Summit, N. J.

March 15, 1941

Mr. Harvey K. Murer
15 New England Avenue
Apartment 9A
Summit, New Jersey

Dear Mr. Murer:

Mr. Cholak has turned over to me your letter of March 5th with the idea that I might perhaps be able to give you somewhat better information with respect to industrial establishments than he could. However, before making specific suggestions with respect to how or where observations on industrial employees might be made, it might be well if I were to make a few comments with respect to your main thesis, namely, that pectin prevents lead absorption.

I can not but wonder whether your conclusion is right in this regard and my point is based not on theoretical considerations but on our own observations. In the first place, the absorption of lead from the human alimentary tract is very scanty. In a long series of experiments, in which we have been administering soluble lead salts, in solution, to human subjects, we have found that only a small proportion of the administered lead ever gains entrance to the body. Something like 95% of that which is given daily appears in the feces within the next twenty-four, thirty-six or forty-eight hours, depending upon the alimentary emptying time. This being the case, the proportion actually absorbed into the tissues is quite small, and unless the methods of detection in the tissues were very sensitive and very accurate, it would be easy to miss the minute quantities which result from small dosages over a short period of time. I do not presume to criticize your experimental observations for I know nothing of your general procedures with respect to the administration of your lead compound, nor of the precise analytical measures which you are taking to detect absorption. However I think you should be very sure of your facts before you proceed with any medical or therapeutic observations.

Further doubt as to the activity of pectin is based on our observations that the feeding of rather large quantities of apple powder to experimental subjects on known daily dosages of lead, failed completely to alter in any way the metabolic picture with respect to lead. Our subjects continued on the dosage of apple powder for twenty-eight days, during which time they were taking lead by mouth as they had been during a period of many months previously, but nothing happened. This may not be the same as giving pectin.

I am not suggesting that you describe the manner of your experimentation, or the results of your observations in such detail as would enable me to criticize them. I am not so presumptuous. Moreover I should be very happy to give every assistance to any project which offers any considerable hope of reducing the alimentary absorption of lead. However, there is one other point which must be considered in relation to industrial lead exposure. The problem here is not absorption from the alimentary tract, but rather respiratory absorption. Lead which is suspended in finely divided form in the atmosphere of workrooms is the primary hazard of the lead trades, and although a certain proportion of such lead inevitably finds its way into the alimentary tract, the chief absorption is, without doubt, within the lung. Accordingly, it would be very difficult to determine the effects of the administration of pectin on industrial workers, and, in my opinion, it would be much better in studying this problem to resort to experimental subjects under controlled conditions which would not involve respiratory lead exposure.

Finally I should be glad to give you any possible assistance in connection with your work, and I shall be very much interested in your reaction to the comments I have made.

Very truly yours,

RAK:is

Robert A. Kehoe, M.D.