



BALTIMORE CITY HOSPITALS

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IN REPLY REFER TO:

May 12, 1969

Dr. Robert A. Kehoe
Kettering Laboratory
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Eden Avenue
Cincinnati, Ohio 45219

Dear Dr. Kehoe:

As you are doubtless aware, there is considerable ferment and a rising demand for large scale screening of young children for early detection of lead poisoning in the urban slum areas. It is this and some of the associated problems that prompts my letter to you at this time. I am about to undertake an evaluation of the various techniques which include blood lead determination, concentration of δ -aminolevulinic acid in urine and lead in hair. It is my personal opinion that blood lead determinations must remain the cornerstone of any screening program designed for young children. I believe that the evidence supports this position. However, there are some practical limitations when this is applied on a large-scale basis in young children. The main field problem, of course, is the problem of obtaining adequate samples of venous blood in very young children. This often requires jugular or femoral puncture which are obviously impractical. There is also the possibility of resistance on the part of the population to be screened by sampling of blood. With respect to the urinary ALA test, all the evidence is not in but it is entirely possible that this may be no more sensitive than a urinary coproporphyrin test when applied to a random sample of urine. We hope to have the answers to these questions at the conclusion of this study. From the point of view of ease of sampling in the field, the determination of lead in hair seems most attractive. From the metabolic point of view, however, I know that you have grave reservations with respect to the interpretation and meaning of lead in hair. To date, the reported studies on lead in hair do not appear to be adequately controlled. The procedure recommended is that of Kopito and Shwachman. They suggest that hair can be cleansed by boiling and that if the one or two centimeters closest to the scalp are taken for analysis, then the problem of external contamination can be minimized, if not completely eliminated. I should greatly appreciate your thoughts on these problems and in particular, your thoughts with respect to the determination of lead in hair.

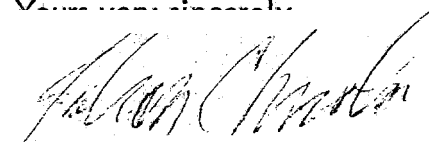
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Robert A. Kehoe
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There may be some evidence on this that I am not aware of. I spoke briefly with Dr. Harriet Hardy about lead in hair. She also has reservations about the validity and interpretation of lead in hair. As I see it, a mass screening program should be directed at the early detection of a minimal increase in body lead burden. That is, detection prior to the appearance of evidence of toxicity. So the question is does lead in hair provide a sensitive early index of the increase in body lead burden. It would seem to me that what we really need is the ability to determine lead in blood with reasonable accuracy on very small samples, possibly obtained by capillary puncture. Your thoughts on these questions would certainly be greatly appreciated. I look forward to seeing you, perhaps at some meeting in the near future.

Very respectfully,



J. Julian Chisolm, Jr., M.D.

JJC:ov