

IRVING GRAY, M. D., F.A.C.P.
FORTY-ONE EASTERN PARKWAY
(COPILEY PLAZA)
BROOKLYN, NEW YORK

March 16th, 1936.

Dr. Robert A. Kehoe,
University of Cincinnati,
Cincinnati, Ohio.

My dear Dr. Kehoe:

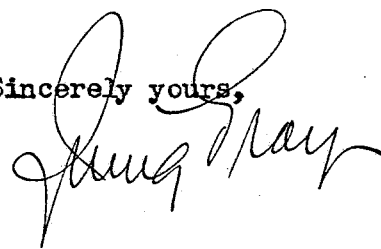
I would very much appreciate knowing what you consider the normal amount of lead in 100 grams of whole blood.

Several chemists around New York City have told me that 0.1 mgm. per 100 grams of whole blood may be considered normal.

Your opinion in this matter would be of great help to me.

With kindest regards and thanking you for your interest, I remain

Sincerely yours,



IG:MN

KE

0001429

March 20, 1936

Dr. Irving Gray
Forty-One Eastern Parkway
Brooklyn, New York

Dear Dr. Gray:

Your letter of March 16th is not quite so easy to answer as it might appear. From the published information I am not convinced that any one can be entirely sure of the range of variation of the lead in the blood of normal individuals. From our observations it seems that there is some considerable variation at different times of the day and under different circumstances. We have published some figures which indicate that the mean value in the circulatory blood of normal adults, also of normal children, is approximately 0.05 mgs. per 100 cc. We have seen values as low as .01 and we have occasionally had results on presumably normal persons as high as .14. The latter is quite rare, I believe, but we have no reason for assuming that such values may not occur in normal persons. I still feel that we have not covered definitely the range of variation and we have considered this as a problem which must be completed soon, but unfortunately we have been so busy with other things that we have not been able to satisfy ourselves entirely on this question. On the basis of our present information, I should say that in terms of a single observation, values up to 0.1 mgs. per 100 cc must be regarded as normal, values between 0.1 and 0.15 should be regarded with some suspicion, and values above .15 should probably be regarded as abnormal. From a series of observations made on individuals I should be disposed to regard percentage values above 0.1 as evidence of somewhat abnormal lead exposure.

It must be obvious to you that I am speaking in terms of analytical methods which have been carefully standardized and which are known to yield results with only a minute error. So far as I know, the only two methods which are available to give results of this sort on small samples of blood are carefully standardized spectrographic methods and one or the other of the carefully checked modifications of the dithizone method. Results obtained by the less sensitive chemical methods will fall in a different zone and can not be related to the above values unless the loss or error of the method has been definitely established, and unless it is known to be uniform. Obviously indealing with variations in analytical results within these limits, one must always know the precise method of analysis employed.

VE 0001430

Dr. Irving Gray

I hope soon to be able to publish somewhat more precise information on this question which I regard as of considerable importance. For the present, however, we rely more definitely upon the urinary results than upon the blood, although we are obtaining data on the blood from every case which comes to our attention.

With kindest personal regards,

Sincerely yours,

RAK:ls

Robert A. Kehoe, M.D.

KE 0001431