

April 8, 1944

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Dr. E. C. Funsch,
4101 Laclede Avenue,
St. Louis, Missouri.

Dear Dr. Funsch:

Before sending you containers for the collection of blood samples, in accordance with the request in your letter of March 29, it seems desirable to acquaint you with our general procedure for dealing with work of this type.

This is not a clinical diagnostic laboratory, and it is not in accord with our policy as a University laboratory engaged in investigation to do work of this sort generally for fees. Our primary interest is in the collection of information on the general subject of occupational exposures which bring about lead absorption in abnormal quantities. On the other hand, I realize the difficulties associated with obtaining reliable results for a diagnosis of lead poisoning and for the care of patients, and therefore we have been not only willing but glad to cooperate with our medical colleagues in carrying out analyses in cases on which we can obtain full clinical information concerning the nature of the lead exposure, its duration, and the details of the clinical picture produced thereby. For this service we charge the actual cost of carrying out the analyses, this approximating \$5.00 per sample analyzed.

Considering the fact that the measurement of lead absorption is not always easy and that samples are subject to variation as well as to frequent contamination, it is our practice to supply equipment for the collection of samples as well as detailed instructions. In general, I do not consider a single blood sample to be satisfactory for the purposes of interpreting the degree of lead absorption. We advise the collection of two samples of blood at the same time, the one serving as a check on the other from the point of view of possible contamination. In addition we advise the collection of the spot sample of urine at the same time, since the lead concentration in the urine is a better measure of the lead absorption under most conditions

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for a number of reasons. In any case, the interpretation of the results obtained on the two sets of samples is much simpler and much more certain. We do not charge extra for the additional sample of blood, in spite of the greater expense of dealing with it, for the reason that it is our means of assuring ourselves that the samples have been properly collected.

I am attaching hereto instructions for the collection of spot samples of urine on both men and women, as well as instructions for the collection of blood samples. It is necessary that these instructions be followed with the most minute care, since otherwise contamination of the sample occurs almost with regularity. This is a problem which very few people can appreciate, since few recognize how widely disseminated lead dusts are, and since still fewer fail to appreciate the smallness of the quantities of lead involved in samples of this type.

The interpretation of the analytical information cannot be made in such a way as to indicate the presence of lead intoxication. There is no value for the lead concentration in the blood, urine or tissues that can be regarded as diagnostic of lead intoxication. The analytical data can be used only to estimate the order of magnitude of the lead absorption. It is true, of course, that the wider deviations from the normal are associated with a higher incidence of intoxication, but in the individual case the analytical results have no implication in relation to illness. The diagnosis must always be made on purely clinical grounds. For this reason it is our practice to interpret all analytical data when reporting them, the interpretation being based on the findings and on the information supplied. It is obviously necessary, therefore, to have the clinical data.

If after considering the matter further you are willing to comply with our requirements, we should be glad to give you such assistance as we can.

Very truly yours,

Robert A. Kehoe, M. D.

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