

June 17, 1949

Dr. Anna M. Baetjer,
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School of Hygiene and Public Health,
615 North Wolfe Street,
Baltimore 5, Maryland.

Dear Doctor Baetjer:

I am always glad to hear from you on any account, and I hasten to reply to your letter of June 13.

The question of the origin of the porphyrinuria in the case referred to in your letter is one on which I can make no very useful comment, except to say that it would be quite impossible, in my opinion, for a service station employee to absorb enough lead in the course of his handling of leaded gasoline to induce any type of illness. In the practical sense of the word, this is not an occupational exposure to lead. We have followed a large number of filling station attendants over a period of years (in former years), and we have never been able to find the slightest evidence that they absorb measurable amounts of lead in their work. Your letter states that this man "handled tetraethyl lead and batteries." Actually I cannot conceive of any manner in which he could have handled any tetraethyl lead, as such, and therefore his exposure to tetraethyl lead consisted of the hypothetical exposure associated with the handling of gasoline containing not in excess of 3 cubic centimeters of tetraethyl lead per gallon of gasoline. In my experience, the handling of batteries at service stations is actually an inconsequential type of lead exposure. It is true, however, that if such a man engaged in the repair of batteries, he could be significantly exposed to lead compounds. Generally speaking, this does not occur. It is also true that this man's work at American Smelting and Refining Company could have exposed him significantly to lead. On the other hand, the fact that he worked for such a company does not necessarily have significance in this regard. Despite these comments, which might point to a significant occupational exposure to lead during some period of this man's work, all I can say, categorically, is that the occupational factor of handling leaded gasoline should be utterly excluded. I might point out in this regard that there has never been a case of lead poisoning from the handling of leaded gasoline at service stations in the history of the industry. In my opinion, there never will be. It may be pertinent also to point out that the absorption of tetraethyl lead, even in significant quantities, has never been known to have any influence on the blood. Stippling has never been seen in this association, and anemia in relation to absorption does not occur to any measurable degree. We have not studied the porphyrins in this relationship, despite

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the fact that it would be interesting to do so, for the reason that this problem seemed to have very little significance in relation to tetraethyl lead.

One other thing I might suggest. If the man's doctor, despite my comments, should feel that consideration has to be given to the lead exposure of this man as a filling station attendant, I should advise that he have one or more samples of urine analyzed in this relationship. The absorption of tetraethyl lead results in very slight changes in the lead concentration of the blood, even when the urinary excretion of lead is disproportionately high. This has something to do with the slightly different metabolism of tetraethyl lead in the animal organism, in that the intermediate lead compound formed under these conditions tends to get out of the circulating blood at a rapid rate.

With best regards,

Sincerely yours,

Robert A. Kehoe, M. D.

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