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Austin E. Givens, M.D.
E. I. DuPont DeNemours & Company
Antioch Works
P.O. Box 310
Antioch, California 94509

Dear Dr. Givens:

Dr. Lerner sent your letter and chart to me for notice and comment, as is his custom, as a rule, in matters concerned with tetra-ethyl lead. Later he suggested to me that I make comment to you directly if and when I considered it useful to do so.

It does in this instance appear that this might be desirable, for not many of us have been directly concerned medically with the safety, health, and behavior of those who work with this compound, and it seems that we should share our experiences.

The point which I made to Dr. Lerner was that it was not possible to be sure that an increase in the secretion of lead in the urine had occurred unless one were to know the volume of the total urinary output from day to day or from time to time. If, for example, the initial level of the dosage of lead had caused some degree of damage to the kidney, the urinary excretion of lead although high, might not have been as high as it should at the time of excretion, whereas some days later the kidney may have recovered to such an extent as to yield a proper response. In any case the question is - what is the total output of lead from day to day? This is much more important than the concentration of lead at any one time, since the throughput of water is always involved in the extent of the concentration. That is, if little water is available in the body or if the ability of the kidney to excrete water is low, the concentration of solids will be (or may be) high.

I do not mean to suggest by what I have said that we know all we should know about the excretion of lead by the renal apparatus. Nor do we know for a certainty why it is that the blood does not develop a sufficiently elevated concentration of lead when tetraethyl lead is absorbed into the body. We have to make certain assumptions to explain the deviations in

the behavior of lead when it is organic rather than inorganic in form. I am sure that we do not have all of the answers. All I am saying, therefore, is that we must have all of the information that can be obtained in order to explain the phenomena. We must make some clinical shortcuts, but when we do, we are likely to make some physiological mistakes.

I join Dr. Lerner in thanking you for reporting your findings.

Cordially,

Robert A. Kehoe

Robert A. Kehoe, M.D.
Professor Emeritus of
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RAK:di

cc: Dr. Sidney Lerner