

INTERNATIONAL LEAD ZINC RESEARCH ORGANIZATION, INC.

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April 9, 1973

Dr. Raymond R. Suskind, Director
University of Cincinnati Medical Center
3223 Eden Avenue
Cincinnati, Ohio 45219

Dear Dr. Suskind:

I am enclosing a copy of a letter from Dr. Hammond to Dr. Bridbord of EPA concerning the EPA position on the health effects of airborne lead.

In view of our discussions and also the discussion which went on in St. Louis, I find it difficult to accept Dr. Hammond's position. Don Lynam has been in contact with Dr. Hammond and is providing him with our documentation.

Frankly, I do not feel that Dr. Hammond's letter is really very scientific and certainly does not reflect what is known about the effects of environmental lead on health. While I am sometimes regarded as being biased since I work for the lead industry, I am also a graduate of Kettering; and I am frankly surprised that such a letter could come out of an institution which I had always felt was a citadel of scientific objectivity and had unusual expertise in the field of lead toxicology and physiology. Therefore, I am surprised that Dr. Hammond's opinion has, so far, been the only one from Kettering. Certainly, Dr. Hammond's letter does not represent all that Kettering has to offer on the subject of lead in the environment. If I am mistaken and this is the case, things have come to a rather sorry state, and I am disappointed.

Sincerely,

Jerome F. Cole, Sc.D.
Manager, Environmental Health

cc: Dr. R.A. Kehoe ✓

Enclosure

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University of Cincinnati Medical Center

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Cincinnati, Ohio 45219

DEPARTMENT OF ENVIRONMENTAL HEALTH
KETTERING LABORATORY
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March 9, 1973

Dr. Kenneth Bridbord
Processes and Effects Division
Office of Research and Monitoring
U. S. Environmental Protection Agency
Washington, D. C. 20460

Dear Dr. Bridbord:

I have read the paper you sent me January 17, entitled "EPA's Position on the Health Effects of Airborne Lead". I heartily endorse your decision to recommend that the air standard be reduced below $2 \mu\text{g}/\text{M}^3$. As you know, I have on several occasions made the point to you, Dr. Hammer, and Dr. Newell, that many major cities have attained a level of likely lead hazard at ambient air concentrations between 1 and $2 \mu\text{g}/\text{M}^3$. The new information you present in your position paper serves to strengthen the hypothesis that the dangerously elevated lead concentration in the blood of many inner-city children is at least in part traceable to auto exhaust. I did not hear the papers presented at Amsterdam. I can, therefore, not comment on them. But I believe that the Smeltertown study alone lends a high degree of credibility to the hypothesis that very young children will, in fact, ingest toxicologically significant amounts of dust and dirt when it contains lead at the level of 0.1 percent and up.

The concentration of lead in city dust and dirt is probably arithmetically proportional to exhaust-generated lead output. Further, blood lead is probably arithmetically proportional to intake in a steady-state biological situation (intake = output). Therefore, I think that lowering lead emissions by 50 percent would probably reduce blood leads by a similar amount (minus food and water contributions). Thus, if food and water contributions result in a blood lead concentration of $10 \mu\text{g}/100 \text{ g}$ blood and blood lead equals $40 \mu\text{g}/100 \text{ g}$ in an inner-city child, reducing emissions 50 percent would probably reduce blood lead by: $40 \mu\text{g}/100 \text{ g} - 10 \mu\text{g}/100 \text{ g} \times 0.5$, or $15 \mu\text{g}/\text{g}$.

The above described calculation is crude, but I am sure you are faced with the need to specify what the air standard should be. You, therefore, need numbers.

Sincerely,

Paul B. Hammond

Paul B. Hammond, D.V.M., Ph.D.
Professor of Environmental Health

PBH:sh