ETHYL CORPORATION

INTER-OFFICE

Lead ?
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To	Dr. E. B. Rifkin	Address	Detroit
From	Gary Ter Haar	Address	Detroit
Subject	Visit to Kettering to Discuss Kehoe Data	Date	May 12, 1975

On May 9, B. Sobel, J. Spraul, M. Zavon and I visited Kettering Laboratory to discuss with Dr. S. Gross his progress on evaluation of the data from Kehoe's numerous inhalation and ingestion exposures to lead. The 17 individuals involved in these experiments resulted in 80 exposures. These exposures include: baseline, inhalation exposure, ingestion exposure, and recovery period. Dr. Gross, with much assistance from B. Sobel, has attempted to fit the blood response from exposure, and recovery period after exposure, to an exponential fit. Of the total exposures investigated, about 24 certainly will fit the exponential exposure, 6 seem probable and the remaining 50 show a lack of fit. This does not mean that they will not yet show an exponential fit, but that variables such as changes in the diet and erratic fecal excretion thus far obscure the results.

The extreme importance of diet on the blood lead values, even when exposure was considerable from other sources, emphasizes the importance of either knowing the lead content or carefully controlling the lead content of the diet during these experiments. Our discussion of the data available prompted M. Zavon to suggest that a paper should be prepared which would include our preliminary approaches and analysis of the data and place strong emphasis on the dietary contribution to any study of this sort. It also appears that an attractive approach will be one suggested by Gordon Hughmark which involves total balance data. This approach takes the total lead in the diet and compares it to the total lead in fecal and urine excretion. A plot is then made of a cumulative difference between these two values. For instance, if the difference between intake and excretion was 10 ug per week, a plot would be made which would show that at the end of the first week the balance was off by 10 and at the end of the second week off by 20 and so on. Such a plot, when made against time, would be linear with a slope of 10 ug per week. Most of the Kehoe data show excretion is higher than intake, so that a plot such as that discussed above would give one an estimate of the intake due to lead in air.

The plans at this time are to put together a paper which will emphasize the diet contribution, the type of statistical approach which is being used with the data, values for average blood lead responses to lead in air and lead in diet, values for average urine response to lead in air and lead in diet and our problems and plans with these preliminary evaluations.

We believe the preparation of such a paper will be useful for several reasons.

1. First of all, it will allow all of us to see more clearly what has been done on this program so far.

2. It will allow Gross and his group to organize their data and see where they are at and where they are going.

3. It should be a valuable contribution to the literature and may result in suggestions from readers as to the best approaches to take with the data.

4. We are hopeful that certain areas of the data are sufficiently well defined that they will refute EPA's position, especially as regards low level ingestion of lead.

A goal was set that a good draft will be ready in 45 to 60 days.

Gary Ter Haar

GTH:mew

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