

Letters to the Editor

Dear Sir:

This letter concerns the article by Johnson, et al. in ENVIRONMENTAL HEALTH PERSPECTIVES, entitled Levels of Platinum, Palladium, and Lead in Populations of Southern California (1).

Dr. Johnson and Mr. Moran of EPA gave testimony to the California Air Resources Board covering the same information on November 4, 1975, at a hearing on lead standards. Then on December 19, we received a complete report which had also been sent to Dr. Cole of ILZRO, along with the contract officer's review analysis.

When one probes the blood lead data further to examine the day 1 and day 2 comparisons for a set of 14 Los Angeles residents with very high blood lead values, as found in the Addendum to the Final Report dated December 1, 1975, one finds no agreement at all in blood lead values allegedly taken from the same subjects on successive days! This is as the Project Officer states, "not biologically related". A simpler interpretation is that it is not biologically possible. It either represents contamination or some other artifact.

The authors of the article in ENVIRONMENTAL HEALTH PERSPECTIVES must have known before submitting the article that these duplicates had implausible differences since they averaged the duplicates.

Even if the first days' blood lead data are discarded, the data do show greater lead burdens in the Los Angeles than Lancaster populations. The blood lead data, however, in their Table 4 for Los Angeles must be considered unreliable. The statement on p. 30 of the article that "Of the blood sample, from males and females of Group I in Los Angeles, 10% had 40 mg lead/100 ml or higher" is of doubtful accuracy and validity. The statement is regrettably cited in the Seventh Annual Report (1976) of the Council on Environmental Quality, p. 9.

I propose that this problem be clarified by the authors in a note in the *Perspectives*.

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1. Johnson, R. E. et al. Levels of platinum, palladium, and lead in populations of Southern California. *Environ. Health Perspect.* 12: 27 (1975).

Dear Sir:

We appreciate Dr. Goldsmith's interest in our study which was designed to compare the levels of platinum, palladium, and lead in the environment in the residents of Lancaster and Los Angeles, California. We share his concern that studies evaluating potential health effects be conducted objectively and impartially.

The article in question was prepared before all of the statistical analyses had been completed. The variations in the same subject blood lead levels are discussed and statistically analyzed in the final report (1). There was high day-to-day variation in the blood lead values obtained for the participants in this study. The lead data from the 99 Los Angeles participants and the 97 Lancaster participants who provided two blood samples was examined for bias between the first and second samples. Kolmogorov-Smirnov tests found no significant difference between the first sample and the second sample distribution for either location. Paired comparison *t*-tests of the logarithmically transformed data gave no significant difference in geometric means between the first sample and the second sample for either location.

While these statistical analyses suggest no significant bias between our first and second day sample lead determinations, we consider the observed daily blood lead variability a topic requiring further analysis. Our assumption in the statistical analysis was that the first sample lead determination and the second sample lead determination are of equivalent validity in estimating a participant's blood lead level. While the statistical tests of sample bias tend to support this assumption, they are not conclusive.

The statistical methods used to compare lead levels in the air and soil and in the residents (blood, urine, hair, and feces) of Lancaster versus Los Angeles took into account the error terms for sampling, shipping, analysis and individual sample variation. From these analyses it has been concluded that lead levels in air and soil and in blood, urine, short hair and long hair are significantly higher in the Los Angeles study area than in the Lancaster study area.

I hope this will help to clarify the paper.

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1. Johnson, D. E. Baseline levels of platinum and palladium in human tissues. EPA-600/1-75-019, March 1976, pp. 116-17, 152-63.