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EMPLOYEE RELATIONS DEPARTMENT

HASKELL LABORATORY
FOR
TOXICOLOGY AND INDUSTRIAL MEDICINE

November 7, 1968

Dr. E. King, Director
Department of Occupational Health
University of Manchester
Clinical Sciences Building
York Place
Manchester 13, England

Dear Dr. King:

Don Fowler has passed on your letter on the Zielhuis paper to me and I am writing this letter as a first reaction since time is short.

It would not appear to me that your data support that of Zielhuis since your correlation coefficients are so low. These yield R^2 or a coefficient of determination of no more than 4.41, thus only 4.41 per cent of the variance is explained by the regression of Hb on PbU (or in the case of PbB on Hb of 7.29 per cent). These figures are insignificant and therefore no further manipulation is warranted. Dr. Zielhuis makes the same point in only accepting a correlation that has an R^2 value of 65 per cent or greater. In a quick plot of data immediately available to me from the literature in which individual values are given and not just group averages, I find no significant correlation as you can see from the enclosed graph.

I am doubtful about the use of the bisector or "principal components line" since Pb is presumably a cause of a lowered hemoglobin value, but the reverse is not true (over a reasonable range of values). Thus using both plots has little biological meaning and is not justified.

Common sense would suggest that the relationship between hemoglobin and blood lead should be curvilinear with a "no effect" level occurring in the low blood lead range and an increasing effect as the blood lead values rise.

We hope to have some data available shortly on individuals that will enable us to test this hypothesis.

Yours sincerely,

ORIGINAL SIGNED BY
G. J. STOPPS

G. J. Stopps, M.B., B.S.
Chief, Physiology Section

GJS/dyb
Enc.