

BIO-MEDICAL RESEARCH
DOCUMENT DESCRIPTION FORM

R&S 110793

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Brief Summary

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Letters continued

A situation in which such a family with a latent, inherited disorder has suffered unexpected toxicity from an exposure, and in which the relationship of the affected individuals has initially escaped notice, remains to be reported. This family demonstrates the potential for such a circumstance.

Wynder⁷ has used the term "metabolic epidemiology" in proposing integrated, interdisciplinary studies to define the extremes of risk for disease. The identification of subpopulations within the community at elevated risk for exposure related illness is one aspect of this approach.

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Log Normal Distribution of the Incubation Period of Liver Angiosarcoma in Vinyl Chloride Polymerization Workers

To-the-Editor. — In the June 1978 issue of the *Journal of Occupational Medicine* (9:427-429), NIOSH presented data on 64 cases of liver angiosarcoma among vinyl chloride polymerization workers.

Fig 1 is a log-probit representation of the cumulative percent of the in-

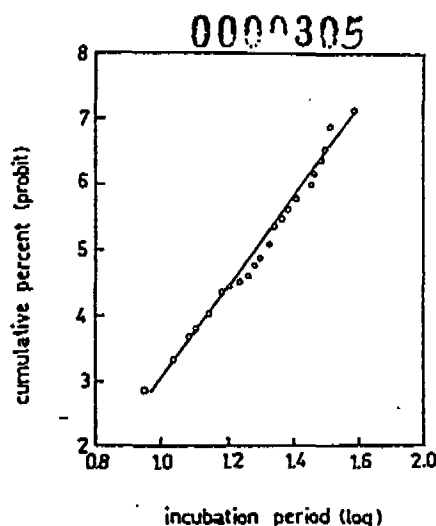


Fig 1. — Log normal distribution of incubation period of 63 liver angiosarcoma cases in vinyl chloride exposed workers. Estimated median (19.3 years) and dispersion factor (1.40) closely resemble those for occupational bladder tumors in the dyestuff industry.

cubation periods of the vinyl chloride induced liver angiosarcomas. The incubation period is defined as the number of years from first exposure to diagnosis. A straight line was fitted to the data. The median of the incubation period for occupational angiosarcoma is 19.3 years with a dispersion factor of 1.40. The dispersion factor is defined as the anti-logarithm of the logarithmic standard deviation.

Thus, Sartwell's model¹ of the distribution of incubation periods of infectious diseases applies equally to the distribution of incubation periods in occupational liver angiosarcoma. Armenian and Lilienfeld² demonstrated earlier that this was also true for the incubation periods of other neoplasms in humans. The median of the incubation period and the dispersion factor for vinyl chloride induced angiosarcoma of the liver strikingly resemble those calculated by these authors for occupational bladder tumors in the dyestuff industry.

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Book Review

Patricia Yarvote, M.D.
Department Editor

Chloroform, Carbon Tetrachloride, and Other Halomethanes: An Environmental Assessment. Prepared by the Environmental Studies Board, Commission on Natural Resources of the National Research Council, 294 pp., \$8.95 1978. Report available in paperback from the Printing and Publishing Office, National Academy of Science, 2101 Constitution Avenue, Washington, DC 20418.

The study assesses the scientific and technical information available on a class of potential multimedia environmental pollutants, the nonfluorinated halomethanes. This class of compounds includes the chlorinated, brominated and iodinated methanes. Chloroform and carbon tetrachloride have been considered in greatest detail because there is more extensive data available on these, and they have been demonstrated to be carcinogenic in high doses in test animals.

A quantitative assessment of human and ecosystem exposures and effects is explored in depth as well as sources, concentrations and global mass balances. Various control options are outlined such as changes in water disinfection practices which would reduce locally elevated concentrations of chloroform and other halomethanes at waste-water treatment plants. The economic analysis of benefits and costs associated with control practices is reviewed.

The participants conclude that further studies are needed to evaluate carcinogenesis, mutagenesis and teratogenesis dose-response effects from low-level environmental exposure to halomethanes. Better primary and secondary calibration standards are essential to assure valid and reproducible lab results. More information is also needed on the worldwide distribution of halomethanes in the environment, including the oceans and glaciers.

Although this is a highly technical document of limited interest, it is an important source of information for those involved with this class of compounds. — Patricia M. Yarvote, M.D.