

7/11/92

MATERIAL RE DR. KEHOE'S CONTEMPLATED PUBLICATION
ON THE KETTERING HUMAN SUBJECTS LEAD STUDIES

✓ The Harben Lectures, 1960 (Kehoe)

The Absorption, Excretion, and Retention of Ingested Lead by Human Experimental Subjects (P. J. Whitaker, Thesis, 1951)

The Fate of Inhaled Particulate Lead Compounds (Kehoe -- Sent to Washington, Feb. 2, 1967) (Subjects JS, LD, NK, SS, HR)

The Fate of Lead in Human Food (Kehoe, Cholak, Hubbard, Bambach, McNary, Story - Proceedings of the Sixth Pacific Science Congress, Vol. VI, Held at Berkeley, Stanford, and San Francisco, July 24-Aug. 2, 1929, pp. 193-204) (JL, PE, HD)

Lead Absorption and Excretion in Relation to the Diagnosis of Lead Poisoning (Kehoe, Thamann, and Cholak - J. Ind. Hyg. 15:320-40 (Sept.), 1933) (Subjects JB (Negro age 45 - Pb intoxication), JF, RS, AJ, JG, AS, EMc, EJ, AK - tissues after death (all had exposure to Pb); WK, FP, WB, AG, MB, KP, EC, WF (child), H (child), G (child) -- suffered Pb poisoning, etc.

An Appraisal of the Lead Hazards Associated with the Distribution and Use of Gasoline Containing Tetraethyl Lead (Kehoe, Thamann, Cholak - J. Ind. Hyg. 16:100-28 (Mar.), 1934). (Filling Station Attendants, Tank Wagon Handlers, Garage Mechanics, Barrel Fillers -- 301 exposed men)

Reply Corporation Inter-Office Correspondence: To: Dr. E.S. Riddle. From: Dr. J. Kehoe. Subject: Visit to Kettering to discuss lead. Date: May 12, 1975, Detroit). To discuss with Dr. S. Gross his progress on evaluation of data from Kehoe's numerous inhalation and ingestion exposures to Pb (17 individuals). Also: To: Mr. Zavon. From: B.A. Sobel. Subject: Processing of Kehoe Experimental Data (May 22, 1975).

Memorandum on an Experimental Study of the Metabolism of Tetraethyl Lead in the Human Body (Kehoe, Nov. 18, 1952).

Lead (Kehoe). (Distribution of Pb in the earth, its waters, and its atmosphere; The absorption, excretion, distribution and accumulation of lead by man; The composite patterns of the metabolism of lead in man; The effects of the absorption of excessive quantities of inorganic lead upon man; The therapy of lead poisoning)

Lead (Kehoe - Pharma. Therap. 1976, Vol. 10, pp. 000-000. Pergamon Press. Printed in Great Britain -- Galley proof?). For contents, see entry above.

- * Speech by Kehoe (after retirement as head of Department of Environmental Health, College of Medicine, University of Cincinnati) -- Statement dealing with three issues of primary importance on the consideration of the national, international, and local problem of lead in the air, insofar as such airborne lead is derived from the emission of lead compounds from automobiles propelled by fuel containing lead antiknock compounds: 1. The inhibition of deltaaminolevulinic acid dehydrase by lead (ALAD), (2) Determination of tolerable concentration of lead in air in combination with lead in food and beverages, (3) ? See the conclusion.

Statement Concerning the Hygienic Aspects of Lead in the Human Environment by Kehoe, Professor Emeritus of Occupational Medicine, Department of Environmental Health, College of Medicine, University of Cincinnati. Purpose: To present and to document the salient facts concerning the hygienic aspects of the occurrence and distribution of Lead in the environment of citizens of the United States of America, with particular reference to the contribution made by the use of leaded gasoline. (Includes The Three-City Study, January, 1965; human subject experiments called "balance experiments (1937 - ingestion, 1950 - inhalation). Also includes all the publications in which, so far, Dr. Kehoe has given results from the "human experiments.)

The Role of Occupational Medicine in Modern Society by Kehoe (this was given to Dr. Bennis).

- * References of Human Subjects to Lead Compounds (Kehoe - Ind. Med. and Surgery 28:3, 156-9 (Mar.), 1959). This is a progress report on an experimental investigation of factors which influence the responses of human subjects to finely divided lead compounds in the atmosphere. Includes pictures of the respiratory chamber and a discussion on it, nature of the lead compound used, and results of six experiments.

Statement on the Potential Hazard to the Public Health Associated with Lead in the Atmosphere of American Cities (Kehoe, October 10, 1961, Kettering Laboratory in the Department of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati, Ohio). This is a presentation of salient facts concerning hygienic aspects of distribution and use of gasoline containing alkyl compounds of lead, introduced in formulations of antiknock compounds.

- * Potential Contribution of Industry to the Health of the Nation (Kehoe - J. Occup. Med. 10:3-9 (Jan.), 1968 -- First Rutherford T. Johnstone Lecture). Dr. Kehoe's introduction was revised by the editor of the journal without consulting Dr. Kehoe, thereby omitting a necessary point in Dr. Kehoe's purpose.

Typewritten copy of the above with the original introduction.

- * Experimental Studies on Lead Absorption and Excretion and Their Relation to the Diagnosis and Treatment of Lead Poisoning (Kehoe, Cholak, Hubbard, Bambach, and McNary -- J. Ind. Hyg. Toxicol. 25:71-9 (Feb.), 1943). Brief (?) resume of the Kettering human experiments and resulting practical considerations.

Experimental Studies on the Ingestion of Lead Compounds (Kehoe, Cholak, Hubbard, Bambach, McNary, and Story -- J. Ind. Hyg. Toxicol. 22:381-400 (Nov.), 1940). Description of studies on safe limits of lead ingestion in food and beverages in regard to the general population (3 subjects, MR and EB (experimental; CH and HD (controls). Conclusion: There is a sufficient factor of safety in relation to the lead content of the general food materials in the United States.

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Experimental Studies on Lead Absorption and Excretion and Their Relation to the Diagnosis and Treatment of Lead Poisoning (Kehoe, Cholak, Hubbard, Bambach, and McNary -- paper presented at the April, 1942 meeting of the American Industrial Hygiene Association. J. Ind. Hyg. Toxicol. 25, 71:9 (Feb.), 1943). Review of the oral lead experiments with human subjects. Conclusion, so far: Within the limits of lead absorption dealt with in these experiments, the lead metabolism is exceedingly stable, so stable, in fact, that it is not importantly influenced by gross changes in the acid-base equilibrium or by the calcium and phosphorous metabolism of the body.

- * Experimental Studies on the Inhalation of Lead by Human Subjects (Kehoe -- Pure and Applied Chemistry 3:129-44, 1961). Experiments on biological significance of lead which began in 1927-28; few years later, oral ingestion experiments; 1950, inhalation experiments with human subjects, which are described herein. The lead respiratory chambers are described, a brief description of clinical observations is made on a human subject, the health care taken of an accepted subject during experimental exposure is given, X-ray diffraction pattern of lead compound employed in the experiments is shown, and the experimental results are detailed (MOB, FC). The most significant result of these experiments is the fact that no hazard of lead poisoning is associated with the inhalation of air containing a fully respirable and absorbable compound of lead in the concentration of 0.15 mg/m^3 , over the period of nearly two years. Experiments were carried out under conditions that simulated those of industry except for their strict uniformity and their virtually complete elimination of the ingestion of lead in connection with the day's work. From long experience in medical supervision and clinical monitoring of industrial employees, it was found that men whose regular rate of urinary lead excretion, over a period of many years of stabilized exposure, is represented by a concentration of not more than 0.1 mg/l or by a lead content of not more than 0.12 g/g are not in danger of developing any form or degree of lead intoxication.

Exposure to Lead (Kehoe -- Occupational Medicine 3:156-71, 1947). Summarization of information on exposure to lead and problems industrial physicians and industrial hygienists have to face, as covered in three headings: (1) significance of exposure of public to lead, (2) certain aspects of industrial exposure to lead, (3) problems of diagnosis. Subjects EB, IF, MR, SW are discussed in relation to lead in food and drink, etc.

Progress Report on Project No. LC-75. "Human Exposure to Ambient Air Concentrations of Particulate Lead." 1962-63. Inhalation experiments - subjects BK and SS

- * Report of Progress (as of July 31, 1966). In an Investigation of "Human Exposure to Particulate Lead Compounds in the Air under Experimental Conditions." Project No. LC-75 - of International Lead Zinc Research Organization. Project of American Petroleum Institute (as of April 26, 1966). Project No. 6220-01-05 - Public Health Service Research Grant (entitled) "The Fate of Inhaled Particulate Lead Compounds." (Kehoe) Includes a list of references of publications which give the principal findings of the investigations with human subjects. Also includes details of experiments carried out since 1962 (design of experiment, etc.)

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Memorandum of Progress Report MM-75. Particulate Lead Compounds in the Air
Under Experimental Conditions. (Kehoe) May 6, 1966. Subjects NK and SS.

Report of Progress in an Investigation of "The Fate of Inhaled Particulate
Lead Compounds." (Kehoe) February 2, 1967. (Marked "Incomplete.")
Includes graphs -- Subjects LB and JS.

*These items give good information which can be used in the writing of Dr. Kehoe's
contemplated publication.

Estelle G. Mergard
May 6, 1969

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