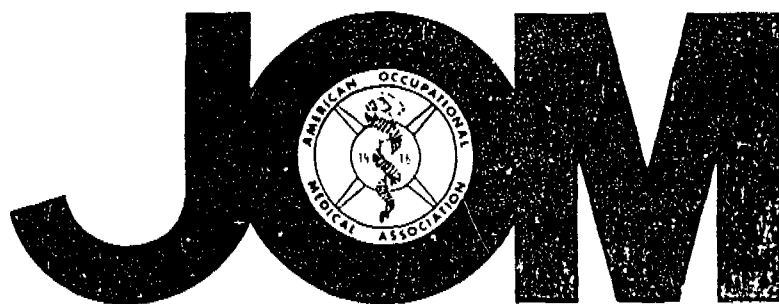




Journal of Occupational Medicine

Official publication of AMERICAN OCCUPATIONAL MEDICAL ASSOCIATION

*Photo
has
table
of contents*

OCCUPATIONAL HEARING LOSS

There is increased risk of noise-induced hearing loss at exposure levels between 85 and 90 dBA, according to this study. This risk increase ranges from 4% to 22.5% for those in the age 50 to 65 range. The large discrepancy in the percentage impaired in the various noise areas cannot be readily explained, but some plausible reasons are given in this article which begins on p. 13.

DOM CHEMICAL CO
ATTN: A. W. LEE
1803 BUILDING
MICHIGAN 48060

12/77

TUMORS IN A PLANT HANDLING 3,3'-DICHLOROBENZIDINE

Although bladder tumors have been a known risk in the dyestuffs industry for more than 75 years, it is only comparatively recently that it has been possible to identify causative chemicals. Details concerning exposure to dichlorobenzidine in a British plant are described in an article beginning on p. 23.

PHYSICAL PROFILES FOR SPECIFIC JOBS

Inherent risk of injury associated with heavy physical work tasks frequently obviates direct job analysis — content validity — for predictive or diagnostic purposes. A common alternative is an appraisal of the physical attributes manifest by job requirements and selection of tests of related physical factors. Identification, validation and probabilities for success are described beginning on p. 27.

"TROUBLED" EMPLOYEES IN A MENTAL HOSPITAL

This article presents an interesting approach for dealing with the psychological factors involved in the work situation. It offers four worthwhile principles for an effective occupational mental health program. See p. 34.

January, 1975, Volume 17, No. 1

R&S 025231

Mercury Burden of Human Autopsy Organs and Tissues. N. K. Muttel, R. L. Body. *Arch Environ Health* 29:18, 1974. Dept. of Pathology, Univ. of Washington School of Medicine, Seattle, WA 98195.

Fourteen different tissues from each of 113 people in the general population of the Puget Sound area of Washington, aged 26 weeks of gestation to 88 years, contained mercury usually below 0.5 $\mu\text{g/gm}$ (ppm). Of all assays 70 percent were 0.25 $\mu\text{g/gm}$ or below. Only 6% had levels at .75 $\mu\text{g/gm}$ or above with no unusually high burden. Levels in kidney tissues averaged well above any other tissue.

—G.E.Q.

Mercury in Man. P. C. Stein; E. E. Campbell; W. D. Moss; P. Trujillo. *Arch Environ Health* 29:25, 1974. Univ. of California, Los Alamos Scientific Laboratory, P.O. Box 1663, Los Alamos, NM 87544.

Lung, liver, and kidney tissues from 47 persons from the Denver area and 38 from the Los Alamos N.M. area (without therapeutic, occupational or environmental histories) contained 1.5 $\mu\text{g/gm}$ (PPM) or below of mercury. All but four samples were at 1.0 ppm or below. There was no significant geographical difference. Authors statistically estimate that if their subjects represent general population, 99% will have less than 1 $\mu\text{g/gm}$ and 95% will have less than 0.2 $\mu\text{g/gm}$. Levels in kidney averaged higher than lung or liver.

—G.E.Q.

Asbestos-Like Fibers in Duluth Water Supply — Relation to Cancer Mortality. T. J. Masson; F. W. McKay; R. W. Miller. *JAMA* 228:1019, 1974. A-521 Landow Bldg., National Cancer Institute, Bethesda, MD 20014.

High concentrations of asbestos-like fibers have been detected recently in the drinking water supplies of Duluth, Minn., and other supplies on the shores of Lake Superior. EPA suggested that these fibers probably came from mine-tailings or mill waste from taconite ore emptied into Lake Superior since 1955. For the next 14 years (since 1955), no carcinogenic effect was found in the patterns of cancer mortality among persons of all ages nor among children. The period of study is short relative to the latent period for occupationally induced carcinogenesis from asbestos.

—G.E.Q.

Ingested Dyed Cellulose in the Blood and Urine of Man. G. Schreiber. *Arch Environ Health* 29:19, 1974. 4619 W. Caruth, Dallas, TX 75209.

Many prior reports of particulate matter in experimental animals' tissues, blood and urine and more recently conjunctival vessels of man motivated a search of blood and urine for previously unrecognized particles. Plant particulates occur as contaminants of many commonly used solutions and as airborne contaminants. Purification and concentration techniques utilizing the grid membrane filter and fastidious methods of preventing contaminants were developed. Some of these same particles dyed with methylene blue or basic Fuchsin were still evident even after elaborate preparative techniques, and author maintains they represent particles transported from the stomach to blood and urine.

(Abstractor's Note: Future investigations might well include search for transport of cellulose particles dyed with gentian violet breathed and ingested in grossly visible amounts by thousands of fruit packers for months on end during 7 to 20 or more years.)

K-1711—G.E.Q.

Angiosarcoma of the Liver Following Vinyl Chloride Exposure. J. B. Block. *JAMA* 229:53, 1974. 1228 Capital Plaza Tower, Frankton, KY 40601.

Recently six workers exposed for 12 or more years to vinyl chloride developed angiosarcoma of the liver. These are the 44th to 49th cases reported in the world literature but without prior relationship to such occupational exposure. It is not known whether brief high-level exposures or long-term lower level exposures caused the cancers.

—G.E.Q.

DERMATOLOGY

Chloracne — A Continuing Problem. J. S. Taylor. *Cutis* 13:585-591, 1974. Dept. Dermatology, Cleveland Clinic Foundation, 9500 Euclid Ave., Cleveland, OH 44106.

Chloracneogenic compounds include chloronaphthalenes, polychlorobiphenyls, polychlorinated dibenzofurans, contaminants of chlorophenols and certain chlorobenzenes. Chloracne, a disease extremely refractory to treatment, clinically consists of straw-colored cysts, comedones, pustules and abscesses on

exposed areas of the body including face, neck and genitalia. A delay of two to four weeks after initial contact to onset may be observed. Systemic effects of the halogens include hepatotoxicity, which may be fatal. Other systemic effects include emphysema, myocardial degeneration, nephritis, hypertension and neurologic changes. Prevention involves use of completely closed systems in manufacture of such chlorinated compounds and absolute avoidance of skin and respiratory contact. Acne surgery and dermabrasion are fairly effective treatments, and recently topical Vitamin A acid has been employed.

—R.M.A.

Prevention of Occupational Skin Diseases from Exposure to Chromic Acid and Chromates: Use of Ascorbic Acid. M. H. Samitz. *Cutis* 13:569-574, 1974. 14th and Spruce St. Philadelphia, PA 19104.

A 10% solution of ascorbic acid is stated to be effective in preventing adverse reactions to chromates. The mechanism involved may include reduction of hexavalent chromium to trivalent chromium with subsequent complex formation. By impregnating respiration filters with ascorbic acid protection may increase.

—R.M.A.

EXPERIMENTAL TOXICOLOGY

Cadmium: Inability to Induce Hypertension in the Rat. M. C. Porter, T. S. Miwa, W. F. Bousquet. *Toxicology Applied Pharmacology* 27:692-695, 1974. Department of Pharmacology and Toxicology, School of Pharmacy and Pharmaceutical Sciences, Purdue University, West Lafayette, Ind.

Cadmium has been suggested as a potential etiologic agent in human hypertension and has been reported to induce hypertension in experimental animals. Cadmium acetate was administered ip to Sprague-Dawley derived and hooded Long-Evans rats at several dose levels and under a variety of treatment schedules and conditions. Under none of these circumstances was hypertension produced. These findings imply that an experimental protocol simply involving Cd administration does not lead, per se, to the production of hypertension. Some subtle dietary or other environmental variable may be of major significance in the production of experimental hypertension with Cd.

—R.E.E.

Selected Reviews from the Literature

largest proportion of the residual variance was the concentration of SO₂. The decrease in peak flow corresponding with a large increase in SO₂ concentration, however, was small, and much of the day-to-day variation in peak flow was due to factors other than the concentrations of smoke or SO₂, temperature, or relative humidity. Reductions in peak flow were often associated with respiratory infections, and, as in the parallel study of spirometric measurements, the possibility that pollution had indirect effects on ventilatory function by affecting the course of respiratory infections was considered.

K-1711

23033. LANGE, C.-E., S. JUEHE, G. STEIN and G. VELTMAN. (Univ.-Hautklin. Bonn, D-5300 Bonn, W. Ger.) Die sogenannte Vinylchlorid-Krankheit-eine berufsbedingte Systemsklerose? [The so-called vinyl chloride disease, an occupational systemic sclerosis?] INT ARCH ARBEITSMED 32(1/2): 1-32. Illus. 1974 [released 1973]. [In Ger. with Ger. and Engl. summ.]--The health status of 13 workers employed for 1.75-18 yr in a polyvinyl chloride factory was studied. Eight of them had scleroderma-like skin changes characterized histologically by thickening and homogenization of the collagen bundles and fragmentation and rarefaction of the elastic fibers. In 7 patients, thickening of terminal finger phalanges resembling clubbing was noted. 11 patients had circulatory disturbances of the extremities (4 had Raynaud's syndrome) and 6 patients had band-like osteolyses of terminal finger phalanges. In addition to these disturbances, thrombocytopenia was observed in all patients, splenomegaly in 12 patients, and malfunction of the liver in 11 patients. Histological examination of liver biopsies taken from 5 patients who underwent laparoscopy revealed marked fibrosis of the portal areas, 4 patients had esophageal varices and 8 showed partial pulmonary insufficiency with signs of predominantly restrictive changes of the lungs. These pathologic changes in a series of different organs are far more extensive than the syndrome of occupational acroosteolysis already known. Long-term exposure to vapors of vinyl chloride may cause this complex disease. This systemic disease should be designated vinyl chloride disease.

23088. VACHER, J., R. DERAEDT and J. BENZONI. (Cent. Rech., Roussel-Uclaf, Romainville, Fr.) Role of the reticuloendothelial system in the production of α -macrofetoprotein in the rat following intravenous injection of beryllium and other particles. TOXICOL APPL PHARM COL 28(1): 28-37. Illus. 1974. [In Engl. with Engl. summ.]--The i.v. injection of Be, C, zymosan and endotoxin in the rat leads to the appearance in the serum of an immunologically specific protein referred to as α -macrofetoprotein (α Mfp). The dose-response relationship and concentration of Be in liver and spleen following injection of various salts

R&S 025233