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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Kenneth D. Johnson, Ph.D
Secretary, Technical Task Group
on Vinyl Chloride Research
Manufacturing Chemists Association
1825 Connecticut Avenue, N.W.
Washington, D.C. 20009

Dear Dr. Johnson:

Enclosed is the final draft of medical screening recommendations stemming from our meeting of March 2 concerning vinyl chloride liver disease. In composing these recommendations, we have tried as far as possible to take into account both the discussion which took place at the meeting and the written recommendations submitted thereafter. This material will now be incorporated into the recommendations being presented by NIOSH to the Labor Department's Occupational Safety and Health Administration for further action.

Thank you very much for your help in developing these recommendations.

Sincerely yours,

Clark W. Heath, Jr., M.D., Chief
Cancer and Birth Defects Division
Bureau of Epidemiology

Enclosure

h. Medical Surveillance

The following recommendations are directed primarily at medical screening to detect liver disease and/or hepatic tumor. They should be considered in the context of routine health screening for any general employee health problems, including non-hepatic health conditions potentially related to vinyl chloride monomer exposure. Routine health screening should include at time of initial employment the recording of past medical history and the performance both of a general physical examination and certain basic laboratory procedures (e.g., complete blood count, urinalysis, chest x-ray); provisions should also be made for routine periodic health followup examinations.

Employees covered by the following specific recommendations shall encompass all persons engaged in vinyl chloride monomer production and polymerization, including personnel peripherally involved such as in clerical and management assignments. The recommendations shall be applied both as a pre-employment requirement and as part of periodic health follow-up. Screening priority should be given to current employees with prolonged and close potential exposure to vinyl chloride monomer, whether in present or past work settings.

(i) At time of initial employment, or upon institution of screening, physical examination shall be performed with specific attention to detecting enlargement of liver or spleen by abdominal palpation.

(ii) At time of initial employment, or upon institution of screening and annually thereafter, a medical history check-list shall be completed by the employee. This list shall include questions concerning:

(a) alcohol intake
(b) past history of hepatitis
(c) past exposure to potential hepatotoxic agents, including drugs and chemicals.
(d) past history of blood transfusions
(e) past history of hospitalizations

Completed medical check-lists shall be reviewed by a physician and should be acted upon as medically indicated for each individual employee.

(iii) At time of initial employment, or upon institution of screening, a serum specimen shall be obtained for screening with respect to the following five bio-chemical determinations of liver function:

(a) total bilirubin
(b) alkaline phosphatase
(c) serum glutamic oxalacetic transaminase (SGOT)
(d) serum glutamic pyruvic transaminase (SGPT)
(e) gamma glutamyl transpeptidase (GGTP)

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Additional tests that may optionally be considered for use in screening include lactic dehydrogenase (LDH), serum protein determinations, serum protein electrophoresis, and platelet count. Laboratory analyses shall be performed in laboratories accredited by the College of American Pathologists or licensed in accordance with the provisions of the Clinical Laboratories Improvement Act of 1967.

(iv) If results of laboratory screening are normal, screening shall be repeated on an annual basis. If the person being screened has been employed directly in vinyl chloride monomer production or polymerization for 10 years or longer, screening shall be repeated every 6 months.

(v) If one or more liver function tests are abnormal, serum testing shall be repeated as soon as possible, preferably within 2 to 4 weeks. If no abnormalities are present upon rescreening, testing should be repeated in 3 months.

(vi) If abnormalities persist on rescreening, the employee shall be removed from contact with vinyl chloride monomer operations and individualized medical workup shall be instituted. Suggested as initial steps in medical workup are a complete physical examination and various special procedures such as hepatitis B antigen determination and liver scanning.

If liver function abnormalities are determined to be unrelated to liver disease (e.g., elevated alkaline phosphatase in a young, physically active man or elevated bilirubin in Gilbert's syndrome) or to be transient (e.g., due to recent hepatitis or recent alcohol intake), the employee may be permitted to return to vinyl chloride-related employment, subject to individual medical evaluation.

(viii) In view of the preliminary results of animal toxicology studies, it is recommended that no woman who is pregnant or who expects to become pregnant should be employed directly in vinyl chloride monomer operations.