



MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

News

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A pilot study of a group of New Bedford residents exposed to chemicals known as polychlorinated biphenyls (PCBs) indicates that while some of those studied have high levels of PCBs in their blood, very few health problems can be traced to the PCB levels, the Massachusetts Department of Public Health (DPH) reported today.

The study involved 51 New Bedford residents who volunteered to participate in the study in November of 1981. As part of the study, they were given a brief physical examination, answered a health questionnaire and gave blood and urine samples for a number of laboratory tests, including serum levels of PCBs. The blood samples were analyzed by the U.S. Centers for Disease Control (CDC) in Atlanta.

PCBs were used extensively in the manufacture of electrical capacitors until 1977, when their use was banned by the federal government because of concern about health problems. New Bedford harbor and the Acushnet River were closed to fishing by DPH in September of 1979 because of high levels of PCB contamination. This study is part of an ongoing effort by DPH to determine possible health effects from the contamination.

According to the study, 16 of the volunteers had PCB levels greater than 30 parts per billion (ppb). Although the federal government has not yet determined a safe level, the CDC estimates that 99 percent of Americans have PCB levels of less than 30 ppb due to routine exposure to PCBs in the environment.

Nine of the 16 had long-term occupational exposure to PCBs. The remainder reported eating fish or eels from the Acushnet River.

Of those with the higher levels, three people had PCB levels greater than 100 ppb. Those three people, all of whom were exposed to PCBs in the electrical capacitor industry in New Bedford, had PCB levels of 119, 326 and 343.

According to Dr. John Cutler of DPH's Division of Environmental Health Assessment, those levels are very high.

"These are probably some of the highest PCB levels recorded anywhere," Dr. Cutler said. "We were very concerned when we first found out that the levels were so high.

"However, when we looked back at the patients' medical histories and the results of their physical examinations, we were unable to find very much evidence that these high PCB levels had affected their health," he explained.

According to Dr. Cutler, there was a slight association between higher PCB levels and high blood pressure in volunteers under the age of 45. There was no correlation between PCB level and liver disease; however, there was an association between higher PCB levels and a test for risk of coronary artery disease. Ten people reported a history of acne, but none specified chloracne, a skin problem commonly associated with PCB exposure. There were no greater than expected numbers of chronic diseases among those with higher PCB levels.

Dr. Cutler emphasized that the findings of the study must be interpreted cautiously for several reasons.

"Since the people studied were volunteers, many of whom had known exposure to PCBs, no conclusions as to the PCB levels in the general population of New Bedford can be made," Dr. Cutler stated. "This question could only be answered by studying a random sample of New Bedford residents.

"Secondly, the number of subjects studied was so small that it is difficult to adjust for such variables as age or weight," he added.

The majority of the people who participated in the study were exposed to PCBs through their work in the electrical capacitor industry or at New Bedford's waste

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water treatment plant or because they ate seafood from the Acushnet River. Fourteen of the volunteers had no known exposure to PCBs.

The following are the results of the study:

- Those who worked in the electrical capacitor industry in New Bedford had PCB levels ranging from 41 ppb to 343 ppb. The average level was 126 ppb, and the median level was 68 ppb.

- Those who reported eating fish or eels from the Acushnet River had PCB levels ranging from 6 ppb to 68 ppb. The average level was 21 ppb, and the median level was 15 ppb.

- Those who work at the New Bedford waste treatment plant had PCB levels ranging from 6 ppb to 41 ppb. The average level was 13 ppb, and the median level was 10 ppb.

- Those with no known exposure to PCBs had PCB levels ranging from 2 ppb to 32 ppb. The average level was 12 ppb, and the median level was 10.5 ppb.

Dr. Cutler said DPH will continue to monitor the health status of New Bedford residents.

"Meanwhile, since there is no known therapy to reduce serum PCB levels, we continue to recommend that New Bedford residents abstain from eating seafood taken from the Acushnet River," he said.

Animal tests have shown that PCB exposure can cause birth defects, skins problems, liver ailments and possibly cancer.

In 1968, 1300 Japanese became ill and five died after eating PCB-contaminated rice.