Several studies of industrial dumps and contaminated water supplies during the last decade have reported adverse health effects among exposed human populations.[1] The principal health findings include:

** Significantly reduced stature (height) for a given age among children who lived near Love Canal, the chemical waste dump in Niagara Falls, N.Y., compared to a control group of children living further from the dump.[2]

** A higher prevalence of birth defects and liver disease among persons living near a thorium waste disposal site in Wayne, New Jersey, compared to persons living further away from the site.[3] (Thorium is a naturally-occurring radioactive element processed on this site by a private firm under contract to the old Atomic Energy Commission, now called the Department of Energy.)

** Low birth weight and birth defects in California children born in census tracts having waste disposal sites.[4]

** Enlargement of the liver (hepatomegaly) and abnormal liver function tests reported in residents exposed to solvents from a toxic waste dump in Hardemann County, Tenn.[5]

** Dermatitis, respiratory irritation, neurologic symptoms and pancreatic cancer at 7 waste disposal sites.[6]

** Significantly elevated rates of illness, including chronic kidney disease, stroke, hypertension [high blood pressure], heart disease, anemia, and skin cancer in a population exposed to toxic metals (cadmium and lead) from mine wastes in Galena, Kansas.[7]

** Leukemia (cancer of the blood-forming cells) among a group of children drinking water contaminated with industrial solvents in Woburn, Mass. In addition, a study of 4936 pregnancies and 5018 residents of Woburn aged 18 or younger revealed significant positive associations between intake of contaminated water and birth defects of the central nervous system, eye, ear, and face (e.g., cleft palate), as well as abnormalities of the chromosomes.[8]

** In Lowell, Mass., a group of 1049 people living 1200 feet from a large chemical waste dump was higher in self-reported complaints of wheezing, shortness of breath, cough, and persistent colds; irregular heart beat; constant fatigue and bowel dysfunction, compared to people living 2 and 3 times as far from the dump.[9]

This study examined the possibility of recall bias (people selectively remembering health problems, or chemical exposures) and concluded that recall bias did not explain the findings.

** In Hamilton, Ontario, a study of people who lived and/or worked near an industrial dump revealed significantly elevated rates of the following conditions: bronchitis; difficulty breathing; cough; skin rash; arthritis; heart problems (angina [chest pain], and heart attacks); muscle weakness in arms and legs; tremors, cramps, and spasms; headaches; dizziness; lethargy; balance problems; and mood symptoms (anxiety, depression, insomnia, irritability, and restlessness) compared to populations living further from the site.[10] Recall bias was examined and rejected as the source of these problems.

** A survey of 2039 persons in 606 households living near the Stringfellow Acid Pits in Riverside County, California revealed significantly elevated rates for the following conditions: ear infections; bronchitis; asthma; angina [chest pain]; skin rashes; blurred vision; pain in the ears; daily cough for more than a month; nausea; frequent diarrhea; unsteady gait; and frequent urination.[11] Recall bias was examined and rejected as the cause of these problems.

** In Tucson, Arizona, a study of 707 children born with heart defects revealed that 35% of them were born to parents living in a part of the city where the water supply was contaminated with industrial solvents (trichloroethylene [TCE], and dichloroethylene). The rate of birth defects of the heart was three times as high among people drinking the contaminated water compared to people in Tucson not drinking contaminated water.[12]

** A study of 296 women experiencing a spontaneous abortion during the first 27 weeks of pregnancy, compared to 1391 women having live births, revealed an association between spontaneous abortion and drinking water contaminants (detectable levels of mercury, or high levels of arsenic, potassium and silica).[13]

** Residents of Bynum, North Carolina, drinking raw river water contaminated by industrial and agricultural chemicals, have developed cancers 2.4 to 2.6 times more often than expected.[14]

To summarize: Epidemiological studies cannot prove a cause and effect relationship. Nevertheless, available information indicates that hazardous waste dumps can harm, and have harmed, humans living nearby. Likewise, contaminated water supplies have harmed people.

The problem of waste dumps is continuing to grow. As the National Research Council of the National Academy of Sciences said in 1991, "A limited number of epidemiologic studies indicate that increased rates of birth defects, spontaneous abortion, neurologic impairment, and cancer have occurred in some residential populations exposed to hazardous wastes. We are concerned that other populations at risk might not have been adequately identified." And the Council said, "Thousands of tons of hazardous materials are slowly migrating into groundwater in areas where they could pose problems in the future, even though current risks could be negligible."

There is a move afoot now in Washington, and in the mass media, to divert attention away from the problem of toxic wastes. The goal seems to be to cut funding for the federal Superfund program of toxic waste cleanup. It seems clear that such a move, if successful, will result in increased health costs for the American people.

--Peter Montague


