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#370 – Chemicals and Health--Part 2 and SLAPPed
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Chemicals and Health--Part 2

The Assistant Surgeon General of the U.S. Public Health Service, Barry L. Johnson, told Congress in May 1993 that living near a hazardous waste site "seems [to be] associated with a small to moderate increased risk of some kinds of birth defects and... some specific cancers."[1] Since 1986 Johnson has been Assistant Administrator of the Agency for Toxic Substances and Disease Registry [ATSDR], the unit of the Public Health Service that Congress created to deal with hazardous waste health issues.

Johnson told Congress that "health investigations of communities around some... hazardous waste sites have found increases in the risk of birth defects, neurotoxic disorders, leukemia, cardiovascular [heart and circulatory system] abnormalities, respiratory and sensory irritation, and dermatitis [skin disorders]."

Johnson told Congress there were 1331 dump sites on the official Superfund list, as of last May. He said industrial solvents are present at 87% of the sites; inorganic compounds (such as lead) at 87%, and pesticides at 50% of the sites. He said 41 million Americans live within 4 miles of 1134 Superfund sites that were studied. On average, 3325 people live within one mile of each site; since there are 1331 listed sites, this means a total of 4.6 million Americans live within a mile of an official Superfund site today.

Johnson said a typical site contains more than 100 different chemicals; "such mixtures may be much more toxic than any of the individual chemicals," he told Congress. (The situation is actually somewhat worse than Johnson described. U.S. Environmental Protection Agency (EPA) analyzed leachate at 13 representative hazardous waste sites from across the country. Only 4% of the organic chemicals in the leachate were identified by gas chromatography/mass spectroscopy [GC/MS], but this 4% included 200 individual chemical compounds, including 13 metals. "The unidentified 96%" of the organic chemicals is "of unknown toxicity," the National Research Council said when it reported EPA's findings in 1991.[2])

To illustrate the point that even a single chemical can cause real problems, Johnson discussed the industrial solvent trichloroethylene (the second-most common chemical found at Superfund sites, after lead). He said, "An increasing body of scientific evidence indicates past exposures to hazardous substances can cause latent [delayed] adverse health effects. Recent findings from the ATSDR exposure registry of approximately 5000 persons exposed in the past to trichloroethylene (TCE) in drinking water showed registrants reporting elevated rates of diabetes, stroke, elevated blood pressure, and neurologic problems."

Johnson then described two large cancer studies that compared the health of people in counties with hazardous waste sites to the health of people in counties without hazardous waste sites. Both studies found an increased frequency of cancers in counties with hazardous waste sites. A 1983 study reported that age-adjusted gastrointestinal (GI) cancer death rates were higher than national averages in 20 of New Jersey's 21 counties (for the period 1968-1977). The environmental variables that correlated most closely with elevated death rates were population density, urbanization, and presence of toxic waste disposal sites.[3] A 1989 study looked at 593 hazardous waste sites in 339 U.S. counties (in 49 states) where contaminated ground water was the sole source for drinking, during the period 1970-1979.[4] (*See* REHN #127.) Excess cancer deaths were found in counties with hazardous waste sites compared to counties without hazardous waste sites for the following kinds of cancers: lung, bladder, esophagus, stomach, large intestine, and rectum for white males; and cancers of the lung, breast, bladder, stomach, large intestine, and rectum for white females. Non-whites were not studied.

Johnson described a study by the New Jersey Department of Health of reproductive effects associated with contaminated drinking water.[5] Public drinking water systems were evaluated in 75 towns in northern New Jersey. The study looked at all live births and stillbirths (excluding chromosomal defects and plural births) during the period 1985-1988 in the 75 towns. The 75 towns were not known to have excessive health problems. Although some water systems had levels of certain contaminants above federal standards at the time of the study, contamination levels in the 75 towns are thought to be typical of U.S. water supplies, Johnson told Congress.

In the 75 towns, statistically significant associations were found for the following: total trihalomethanes [the chemicals formed in drinking water supplies when chlorine is added to kill germs] were associated with low term birth weight, intrauterine growth retardation, central nervous system defects, and major heart defects. Trichloroethylene (TCE) was associated with neural tube defects [defects of the spinal cord and brain] and oral cleft defects [for example, cleft palate]. Carbon tetrachloride was associated with low term birth weight, intrauterine growth retardation, central nervous system defects, and oral cleft defects. Dichloroethane was associated with major heart defects, and dichloroethylenes were associated with central nervous system defects.

Johnson then described a large study of birth defects among children whose mothers lived near waste dumps in New York state. "A particularly important study[6] examined the association between congenital malformations in children and maternal proximity to hazardous waste sites in the state of New York," Johnson told Congress. Researchers at the Yale University School of Medicine and the New York State Department of Health (NYDOH) studied 27,115 births and concluded that, overall, women living within a mile of an inactive dump have a 12% greater chance of bearing a child with a major birth defect, compared to women living further than a mile from a dump. (See REHN #313.)

The researchers looked at 590 inactive dump sites in 20 northern New York Counties. Among the 590 sites studied, 90 were ranked as "high risk" sites because there was documented evidence that chemicals had migrated off the sites. The study found that women living within a mile of any of these 90 sites had a 63% greater chance of bearing a child with a major birth defect, compared to women living further than a mile from all of the 90 sites.

In sum, Johnson's testimony forces the conclusion that toxic waste dumps are hazardous to human health.

[To be continued.]

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[1] "Testimony by Barry L. Johnson, Ph.D., Assistant Surgeon General, Assistant Administrator, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Before the Subcommittee on Superfund, Recycling, and Solid Waste Management, United States Senate, May 6, 1993." Thanks to Diane Heminway of the Citizens Environmental Coalition, Medina, NY, for alerting us to this testimony, and thanks to Dr. Johnson's staff for providing copies of the ATSDR studies referred to in his testimony.

[2] Anthony B. Miller and others, ENVIRONMENTAL EPIDEMIOLOGY VOL. 1; PUBLIC HEALTH AND HAZARDOUS WAST*es* (Washington, D.C.: National Academy Press, 1991), pg. 107.

[3] G. Reza Najem and others, "Gastrointestinal Cancer Mortality in New Jersey Counties and the Relationship with Environmental Variables," INTERNATIONAL JOURNAL OF EPIDEMIOLOGY Vol. 12 (1983), pgs. 276-289.

[4] Jack Griffith and others. "Cancer Mortality in U.S. Counties with Hazardous Waste Sites and Ground Water Pollution." ARCHIVES OF ENVIRONMENTAL HEALTH Vol. 44, No. 2 (March/April 1989), pgs. 69-74.

[5] Frank Bove and others. REPORT ON PHASE IV-A: PUBLIC DRINKING WATER CONTAMINATION AND BIRTHWEIGHT, FETAL DEATHS, AND BIRTH DEFECTS, A CROSS-SECTIONAL STUDY. (Trenton, N.J.: New Jersey Department of Health, April 1992). See also Frank Bove and others, REPORT ON PHASE IV-B: PUBLIC DRINKING WATER CONTAMINATION AND BIRTHWEIGHT, AND SELECTED BIRTH DEFECTS (Trenton, N.J.: New Jersey Department of Health, May 1992).

[6] Sandra A. Geschwind and others, "Risk of Congenital Malformations Associated With Proximity to Hazardous Waste Sites," AMERICAN JOURNAL OF EPIDEMIOLOGY, Vol. 135 (1992), pgs. 1197-1207.

SLAPPed

As the controversy over the toxicity of dioxin mounts, a respected environmental writer on the subject is finding himself defending a $4 million libel lawsuit filed by a retired Monsanto Co. scientist.[1] Dr. Peter Montague, founder and director of the grassroots-oriented Environmental Research Foundation, was sued by Monsanto epidemiologist William Gaffey who claims he was libeled in an article Montague wrote in the March 1990 issue [#171] of RACHEL'S HAZARDOUS WASTE NEWS. The subject of the article was alleged fraud in dioxin studies conducted by Gaffey and his Monsanto colleagues.

Montague's supporters say the case is a classic SLAPP, a lawsuit filed by a corporation to stifle citizen opposition (the acronym stands for Strategic Lawsuit Against Public Participation). Prior to the lawsuit against Montague, Monsanto's alleged fraud was receiving widespread attention and even created momentum for expanding payments to Vietnam veterans exposed to dioxin-contaminated Agent Orange....

Montague based his article on a memo, "Newly revealed Fraud by Monsanto," prepared by EPA scientist Dr. Cate Jenkins. Montague's article also quoted documents from a lawsuit brought by Missouri residents against Monsanto, which revealed numerous discrepancies in the Monsanto studies.

The lawsuit could help resolve some of the controversy over dioxin, since the key issue at trial is expected to be whether what Montague wrote (and Jenkins alleged) is true or not....

Reached at his home in St. Louis, Gaffey said, "I'm afraid we're completely unable to talk until [the trial] is completely finished or much further along."

[This lawsuit is now pending in federal district court in St. Louis; a trial date has not yet been set.]

[Happy New Year.]

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