

Evidence of dioxin-cancer link found to be 'overwhelming'

■ A researcher says a study removes one of the last remaining doubts about the deadly effects of dioxin

By PAUL RAEURN

The Associated Press

NEW YORK — Leukemia, lymphoma and liver cancer are occurring at higher-than-normal rates in people exposed to a cloud of dioxin from a chemical-plant explosion in Italy 17 years ago, researchers have found.

"We found a lot of cancer that was already known to be associated with dioxin" in laboratory studies and other research, said one of the study's authors, Dr. Adriana Tironi of the University of Milan.

An Environmental Protection Agency researcher coordinating a review of dioxin's health dangers said the study, to be published Monday, was "one more nail in the coffin" for dioxin.

"This, together with other studies, clearly supports that dioxin has the potential to cause cancer in people, just as it does in every animal it's been tested in," said Linda Birnbaum, the EPA's director of environmental toxicology. "The weight of evidence is becoming overwhelming."

The study, covering the period 10 years after the 1976 chemical-plant explosion in Seveso, Italy, removes

one of the last remaining doubts about dioxin's deadly effects, Birnbaum said.

"For years people have said, 'Seveso had such high exposures, but we haven't seen any cancers.' We've been saying we just haven't waited long enough," Birnbaum said.

Proving that dioxin causes cancer in people, not just animals, has been important because efforts to clean up dioxin have caused tremendous expense and inconvenience, such as the federal buyout and evacuation of Times Beach, Mo., after dioxin was found there in 1982.

In the completed study, the researchers determined the number of cancer cases in more than 36,000 people with varying degrees of exposure to a form of dioxin known as TCDD. The researchers then compared that group with 180,000 people living nearby who were not exposed.

Of the study group, the 4,824 people with moderate exposure to dioxin had 2.8 times the liver cancer risk of the unexposed population. The exposed group had 3.7 times to 5.7

times the risk of leukemia and lymphoma, the researchers found.

The 31,647 people with the smallest exposure to dioxin had double the risk of non-Hodgkin's lymphoma and 3.5 times the risk of cancers called soft-tissue sarcomas.

A separate group of 724 people very heavily exposed to dioxin did not show a statistically significant cancer increase, but researchers said the group was too small to allow meaningful conclusions.

Dr. Olav Axelson of University Hospital in Linköping, Sweden, who has studied worker exposure to dioxin and related chemicals, said, "This is what we have been expecting to see." He said the findings, to appear in the scientific journal *Epidemiology*, were "quite convincing."

He said there was little remaining question about the danger of dioxin, but questions do remain about how widely people are exposed to dioxin. "The problem is to try to appreciate what dose levels will cause what amount of cancer," he said.