

Doctor Nancy Wertheimer (1927-2007)



Nancy Wertheimer, who more than any other epidemiologist was responsible for identifying the association between magnetic fields and childhood leukaemia, died on Christmas Day 2007, at the age of 80. The cause was complications following hip replacement surgery.

In 1979, Wertheimer and Ed Leeper, her life partner and long-time collaborator, reported that children living near high-current electrical wiring

had a higher than expected rate of leukaemia. At the time, the association was seen as a curiosity and was largely discounted and ignored. The electric utility industry did what it could to discredit the work, and it took the better part of a decade before the work was replicated. In 1988, a team led by David Savitz, and sponsored by the New York State Department of Health, published a paper supporting what had become known as the Wertheimer-Leeper hypothesis. Later work extended the association to measured power-frequency magnetic fields.

A panel of experts, assembled by the International Agency for Research on Cancer (IARC) in 2001, classified power-frequency magnetic fields as a “possible human carcinogen” on the basis of a large body of epidemiological evidence, all stemming from Wertheimer and Leeper’s 1979 landmark paper.

“Nancy was a real pioneer”, David Carpenter, the director of the Institute for Health and the Environment at the University of Albany, NY, told me recently. “It is rare that a scientist opens a whole field of research, which is what Nancy Wertheimer did”.

Her motivation was simple: a desire to find out what causes childhood leukaemia. Wertheimer described how it all started when she accepted the d’Arsonval Award from the Bioelectromagnetics Society in 1999:

Often I’m asked why we chose to study power lines and cancer in the first place: The fact is, of course, that we didn’t. What I originally set out to do was just a bit of “shoeleather” epidemiology –visiting birth homes of young leukemia cases and controls to see what clues to etiology might appear. I wanted to see if cases had lived close to each other, which might suggest an infectious etiology; if they had

Obituary

lived near polluting factories or on busy streets; and so on. About halfway through my sample I began to feel that I was seeing too many pole-mounted transformers in the backyards of my leukemia cases....

What is more unusual is that her breakthrough was achieved without any formal financial support. Even after their work was recognized, Wertheimer and Leeper rarely came to conferences because they had no travel budget. And without grants they were unable to generate data sets to test new ideas. They were left to mine those collected by others. Yet, more often than not, they found connections that had been missed.

In her later years Wertheimer moved on to other projects. “She felt it was time for younger people to work out what it all really means, including understanding the biophysical mechanism”, Leeper told me. “Nancy always said that the risks we had found were small but that we may not have identified the real risks, which could, under certain circumstances,

be larger, or that we may not be looking at the right end points”. These continue to be the missing pieces of the EMF puzzle: what types of fields are responsible and how do they affect biological organisms.

“Nancy was fascinated by how the body reacts to magnetic fields”, Leeper said. “She was a scientist, not a public health advocate. People tried to portray her as a dedicated reformer, but that was not her style. Nancy believed that once the mechanism of action was uncovered, new applications could be devised and that medical benefits might follow”.

Wertheimer was often self-effacing, but she was always firm and never betrayed what she believed was right.

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