

# Rachel's Environment & Health News

## #726 - Science, Precaution and Pesticides

June 06, 2001

Lymphoma is cancer of the white blood cells, and half the people who get it die within 5 years. Those 5 years are likely to be a hellish combination of fear, worry, pain, and sickness caused by standard medical therapies -- radiation treatment, surgery (including bone marrow transplants or stem cell transplants) and/or chemotherapy. Side effects from therapies can include pain, nausea, vomiting, persistent mouth sores, and secondary infections like colds and flu after cancer therapies damage the immune system. Worse, lymphoma can go into remission, then flare up without warning, requiring all the therapies to be repeated. This is a disease that gives its victims a terrifying roller coaster ride through the valley of death.

There are two main kinds of lymphoma -- Hodgkin's disease and non-Hodgkin's lymphoma or NHL. NHL accounts for about 88% of all lymphoma. Some 287,000 people in the U.S. are living with NHL at any given time. About 55,000 new cases of NHL will be diagnosed this year in the U.S. and even more will be diagnosed next year because lymphoma is the second-fastest-growing kind of cancer. Between 1975 and 1998, the incidence (occurrence) of lymphoma increased at about 2.2% per year, though the rate of increase has slowed during the past decade.[1]

No one knows what causes lymphoma, but we know that all cancers are caused by multiple gene mutations (requiring probably 5 to 10 separate injuries) and/or by damage to the parts of the immune system that normally destroy cancer cells. (See REHN #693.) In the past two decades medical researchers have come to suspect that various combinations of factors give rise to lymphoma -- a weakened immune system, exposure to certain kinds of chemicals, and perhaps exposure to one or more viruses. Studies seem to implicate one particular class of chemicals -- chlorophenols. Chlorophenols are chlorine-containing chemicals that include dioxins, PCBs, DDT, and the so-called "phenoxy herbicides," including the weed killers 2,4,5-T, and 2,4-D. This last one is the most popular crabgrass and dandelion killer in America, sold as Weed-B-Gone, Weedone, Miracle, Demise, Lawn-Keep, Raid Weed Killer, Plantgard, Hormotox, and Ded-Weed, among other trademarked names.

Now the Lymphoma Foundation of America has pulled together and summarized in a 49-page booklet all the available studies of the relationship between lymphoma and pesticides.[2] It is an impressive piece of work by Susan Osburn, who directed the project, and a scientific review panel of 12 physicians and lymphoma researchers. The booklet summarizes 99 studies of humans and one study of pet dogs (see REHN #250) in relation to pesticide exposures.

Of the 99 human studies, 75 indicate a connection between exposure to pesticides and lymphomas. Twenty-four show no relationship.[3] The one study of pet dogs indicates that the popular crabgrass killer, 2,4-D, doubles a pet dog's chances of getting cancer. (See REHN #250.)

Does all this "prove" that exposure to pesticides causes cancer? No, it doesn't.

In anything as complicated as pesticide exposures or even cigarette smoke, science can never prove beyond every possible doubt that X causes Y. There is always room for a researcher employed by Philip Morris or the Crop Protection Association (the pesticide trade group) to say, "Couldn't this disease be partly caused by some factor that you haven't taken into consideration? Maybe it's partly caused by some factor you haven't even thought of." And the honest answer must always be, "Yes, there's a slim chance that it could be." Where chemicals and humans and ecosystems are concerned, the complexity is enormous, the tools of science are crude, and what is not known is always much larger than what is known.

It's time we admitted to ourselves that science will never provide definitive answers to some of the most important questions that we face. Still, as individuals and, as a human society, we DO need

answers. We can read the hundred studies of lymphomas and pesticides -- 75% of which tell us there's danger lurking here -- and then we must decide:

- (a) do we personally want to reduce our exposure to pesticides?; and
- (b) do we want to start asking, where did pesticide corporations get the right to spread their dangerous products into the soil, water, and air that we all depend upon?

The Lymphoma Foundation's booklet lists 12 ways that most of us are routinely exposed to pesticides in our daily lives even if we use no pesticides in our homes: routine spraying of apartments, condos, offices (and the associated lawns), public buildings and public spaces (parks, green spaces alongside highways, power line rights of way), and in motels, hotels, and restaurants. Pesticides can also be measured in most foods, much of the water we drink, in the air, and even in rain water. (See REHN #660.) We might well ask, where did these corporations get permission to violate our well-established human right to personal security? And why do we allow these toxic trespasses into our bodies to occur without our informed consent?[4]

In other words, we might begin to view pesticide exposures not as a scientific question, but mainly as a question of morals and ethics, a question of human rights. If we view the problem in this light, then we can review the scientific evidence without expecting it to provide "the answer" to our questions, because science cannot answer questions of morals and ethics and human rights. Science can provide food for thought -- sometimes very compelling food for thought -- but we must provide the thought. Whether to use pesticides -- and whether we want to allow others to expose us and our children to pesticides -- are ethical and political questions. The answers lie within each of us and not with some panel of scientific experts.

What does science give us for guidance? This is where the Lymphoma Foundation's booklet is so useful:

- 1) The available evidence strongly indicates that people exposed to pesticides in their work are more likely than non-exposed or less-exposed people to suffer an excess of lymphoma.
- 2) There are a few studies that tell us that parents who use pesticides are more likely (than non-users) to raise children with an excess of lymphoma. In other words, we need to consider the possibility that, by using pesticides, we are increasing not just our own but also our children's chances of getting this awful disease. (Just as pet dogs pick up pesticides from lawns and track them into homes, so do children.)
- 3) We learn from the Lymphoma Foundation's booklet that scientists employed by pesticide corporations are more likely than independent researchers to find no connection between pesticides and lymphoma. In other words, consciously or not, a scientist's source of funding often influences the outcome of the research. (See REHN #581.) Worse, there is evidence that some scientists employed by chemical corporations conduct studies which could not possibly reveal a relationship between pesticides and lymphoma because they lack the "statistical power" to do so; some of those scientists then falsely claim that their studies provide positive evidence that pesticides are not associated with lymphoma. Some corporations evidently require scientists to check their ethical principles at the door when they report for work.
- 4) We learn from the Lymphoma Foundation's study that not only chlorophenol pesticides, but also atrazine and glyphosate are statistically linked to lymphoma. Atrazine is used on 96% of the U.S. corn crop each year, is found in most drinking water supplies in the midwest during the growing season, and has been strongly linked to birth defects in the children of midwestern farmers. (See REHN #665, #660, and #553.)

Glyphosate is sold as Roundup, Rodeo, Touchdown, Rattler, Sting, and Pondmaster, among other trademarked names. (See REHN #660.) Roundup is the first reason Monsanto Corporation got into the business of genetically engineering food crops. Monsanto now sells "Roundup ready" seeds for corn, soybeans, and cotton; wheat will be next. These are seeds engineered to withstand a thorough dousing with Roundup, which kills weeds without killing the Roundup-ready crops. To make "Roundup ready" seeds legal, U.S. Environmental Protection Agency (EPA) had to triple the amount of glyphosate residues that it allows on crops. For years, Roundup has been Monsanto's most profitable product, and genetic engineering has allowed it to sell -- and to spread into soil and water -- gobs more of it. (See REHN #637, #639, #660, #686.)

As we weigh whether we want to take action against those who expose us and our children to pesticides, we are not limited to thinking about lymphoma.

Pesticide exposures seem to give rise to Parkinson's (REHN #635) -- a horrible degenerative disease of the nervous system. Pesticide exposures diminish children's memory, physical stamina, coordination, and ability to carry out simple tasks like drawing a stick figure of a human being. (See REHN #648.) Pesticide exposures seem to make children more aggressive. Pesticide exposures seem to contribute to the epidemic of attention deficit hyperactivity disorder (ADHD) that has swept through U.S. children in recent years. (See REHN #678.) And, as we saw above, pesticides are strongly linked to birth defects.

If we decide to take up the cudgel against pesticide exposures, we should consider carefully the basis of our strategy. For 30 years the environmental movement has fought science with science, dueling to a draw. Pesticide use has steadily climbed, despite all the scientific evidence of harm.

No, science will not solve this problem for us. Isn't it time to consider a human rights approach, an ethical challenge to the poisoners? And time to find new allies -- perhaps the chemical workers exposed to these poisons? They need good jobs, as we all do, but do they want to leave a skull and crossbones as their legacy? Do they want their children sick? Of course they don't. They need our help, we need theirs.

The old science-based strategy has failed us. Perhaps a new, precautionary path can get us where we need to go. The precautionary principle says, "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically." (See REHN #586.) It is a broad ethical principle. It can guide us all -- workers and environmentalists -- in a righteous fight against corporate greed.

--Peter Montague (National Writers Union, UAW Local 1981/AFL-CIO)

=====

\*Thanks to Rachel Massey for research assistance.

[1] [http://www.cfl.org/resources\\_factsheet\\_non-hodgkin.s.cfm](http://www.cfl.org/resources_factsheet_non-hodgkin.s.cfm)

[2] Susan Osburn, RESEARCH REPORT: DO PESTICIDES CAUSE LYMPHOMA? Available by U.S. mail from Lymphoma Foundation of America, P.O. Box 15335, Chevy Chase, MD 20825. Tel. (202) 223-6181. ISBN 0-9705127-0-8. Available at: [http://www.lymphomahelp.org/docs/research/researchreport/rr\\_2000.pdf](http://www.lymphomahelp.org/docs/research/researchreport/rr_2000.pdf)

[3] Not all the links revealed in these 75 studies are "statistically significant" though the vast majority are. If a study revealed a

positive correlation between exposure to pesticides and increased lymphomas, I counted it as "showing a connection." Likewise, if a study revealed no connection between pesticides and lymphomas -- even if the study was so poorly designed that it could not possibly reveal a connection even if a connection existed -- I counted it as "showing no relationship." --P.M.

[4] The Universal Declaration of Human Rights, signed by the U.S. in 1948, says (Article 3), "Everyone has the right to life, liberty, and security of person." Article 4, Section 4 of the U.S. Constitution obligates the federal government to protect the citizenry against "domestic violence" which arguably includes modern forms of domestic violence such as toxic assault. See <http://www.article4.com/>.