

Natural Resources
Defense Council



1200 New York Ave., N.W.
Suite 400
Washington, DC 20005
202 289-6868
Fax 202 289-1060

Comments Submitted on Behalf of the Decision to Designate 2,3,7,8 - TCDD a Known Human Carcinogen

Submitted by David Wallinga, M.D., MPA
Senior Scientist, Natural Resources Defense Council
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These comments are being submitted on behalf of the Natural Resources Defense Council (NRDC), a non-profit organization with over 350,000 members and devoted to the protection of public health and the environment.

NRDC strongly supports action to designate 2,3,7,8-TCDD as a known human carcinogen. This designation would reflect broad consensus within the scientific and medical communities. It would also follow upon the decision by the International Agency for Research on Cancer (IARC), an arm of the World Health Organization, to declare 2,3,7,8-TCDD, the most potent form of dioxin, a Class 1 or "known human carcinogen" in February of this year. The final IARC vote was unanimous in that none of the 28 participating scientists elected to dissent from the decision to reclassify 2,3,7,8-TCDD. It is also notable that industry scientists were observers of the IARC deliberation while scientists from environmental organizations, such as myself, were not invited to participate.

That TCDD should now be correctly designated a human carcinogen in the U.S. is imperative. First, this designation is based upon ample data. Data comes not only from animal studies, of which there are many, involving male and female animals of multiple strains, in multiple species. It also comes from several epidemiological studies finding a significant association between TCDD exposure and cancer, and at least one of which came to light only after the IARC evaluation.

Finally, data comes from mechanistic studies. In many ways the latter suggest even more aggressive action against dioxins, as broadly defined. There is the fact that TCDD's half life in humans can be hundreds of times longer than that in rodents. This is especially distressing given that Americans already carry an average "body burden" of 13 nanograms of dioxin per kilogram (ng/kg) of body weight. EPA estimates that 5% of Americans have twice this average burden. EPA also noted in 1994 that this average, or background, exposure to dioxin could be elevating lifetime cancer risks such that an additional 25,000 to 250,000 Americans will eventually develop cancer due to dioxin exposure. Moreover, EPA says the average American consumes an additional 3-6 picograms per kg. body weight of total dioxins each day.

The fact that TCDD shares a similar structure with other chlorinated dibenzodioxins, dibenzofurans, and planar PCBs, and that scientific consensus suggests these compounds have a common mechanism of action, should give one equal cause for concern. We believe that for obvious reasons, the National Toxicology Program should formally consider the carcinogenicity of these non-TCDD substances as soon as possible. In addition, assessments of the health risks from exposure to TCDD should take into account cumulative exposure to all of these substances with a common mechanism of action.

There have been complaints from industry that the IARC deliberations on TCDD put inappropriate weight on mechanistic data. This is particularly ironic considering industry pressure to place such data, generally, on equal footing with data from epidemiologic and *in vivo* animal studies in risk assessments, as reflected by the changes in EPA's draft Cancer Risk Assessment Guidelines. In other words, the use of mechanistic data to challenge a public health protective assumption that carcinogens follow a linear dose-response even at low levels is somehow okay, but use of the same sort of data to decide that a substance is a carcinogen in the first place elicits much consternation.

One suspects that in the eyes of some people, there will never be enough data to take action to protect public health. Yet action must be taken. EPA has spent six years "reassessing" the toxicity of dioxin and dioxin-like chemicals. Because dioxin is environmentally persistent, bioaccumulative, and because background levels are already so high, time is important. In other words, there is a cost to inaction. There is no way to reverse the accumulation of dioxin from our bodies over the last six years. And further delay in calling this carcinogen a carcinogen will only put more lives at risk.

NRDC urges NIEHS to follow the scientific leadership demonstrated by the IARC, to look at the preponderance of animal and human evidence showing the carcinogenicity of TCDD, and finally to do what is right. Make a decision. Decide that 2,3,7,8-TCDD, one of the most potent toxins in our environment, is indeed a human carcinogen, and let's get on with the task of making this world a safer place for our children.