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NEW SCIENTIFIC EVIDENCE AND PUBLIC HEALTH IMPERATIVES

The two articles in this issue of the Journal on occupational exposure to benzene1 and prenatal exposure to lead2 confirm the suspicion that very low levels of toxins are capable of causing serious health effects. These impressive studies should quiet the insistence that governmental efforts to control these hazards are excessive and irrational responses to chemophobic social forces. Furthermore, the investigations should make us appreciate the difficulty of reconstructing past exposures to suspected agents in retrospective cohort studies and the value of follow-up, however burdensome, in prospective studies.

These investigations are relevant in terms of regulating exposure to benzene and lead and have implications for social policy regarding scientific evidence in future debates about the advisability of more stringently regulating exposure to asbestos, formaldehyde, dioxin, and ethylene oxide, among other hazardous chemicals.3 Science is a hard taskmaster, and in the light of mounting evidence that suggestions of toxicity are for the most part ultimately confirmed by painstaking scientific inquiry, perhaps it is time to reexamine whether scientific standards of proof of causality — and waiting for the bodies to fall — ought not give way to more preventive public health policies that are satisfied by more realistic conventions and that lead to action sooner.

In 1980, the Supreme Court invalidated the permissible level of exposure to benzene, 1 part per million (ppm) over an eight-hour day, promulgated by the Occupational Safety and Health Administration.4 In a tortuous and confused opinion, the Court reluctantly denied a reduction of the permissible exposure level from the previous standard of 10 ppm because of a lack of sufficient scientific evidence. In oral argument, the American Petroleum Institute pleaded that there was no evidence of cancer at 10 ppm. The Supreme Court opined that there must be "substantial evidence of significant risk" to justify a new protective standard. In this issue of the Journal, we are presented with evidence,5 not only that a significant risk of cancer exists at a cumulative dose equivalent to exposure to

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to formaldehyde, which now indicates a clear risk of cancer to humans.

Recent accusations of chemophobia, conspiracies, and political saber rattling led to a demand for "better science" in the study of occupational and environmental health hazards. All right, now we're getting the better science. It is time to ask: Where is the governmental response? Why has the Occupational Safety and Health Administration not regulated asbestos as a carcinogen? Why doesn't the Environmental Protection Agency regulate formaldehyde? What will the Occupational Safety and Health Administration now do with benzene, the Environmental Protection Agency with lead, and both agencies with ethylene oxide?

The new scientific evidence is appearing at a time of meager federal funding for occupational and environmental health and a weak federal commitment to the regulation of public health hazards. Better science is always to be preferred, but we cannot wait too long to act, too long to see the patterns of mounting evidence on a particular hazard, or too long to see the collective picture on hazards in general. Let us have a governmental response to the new realities.

Nicholas A. Ashford, PH.D., J.D.

REFERENCES