Neurotoxicity: Identifying and Controlling Poisons of the Nervous System

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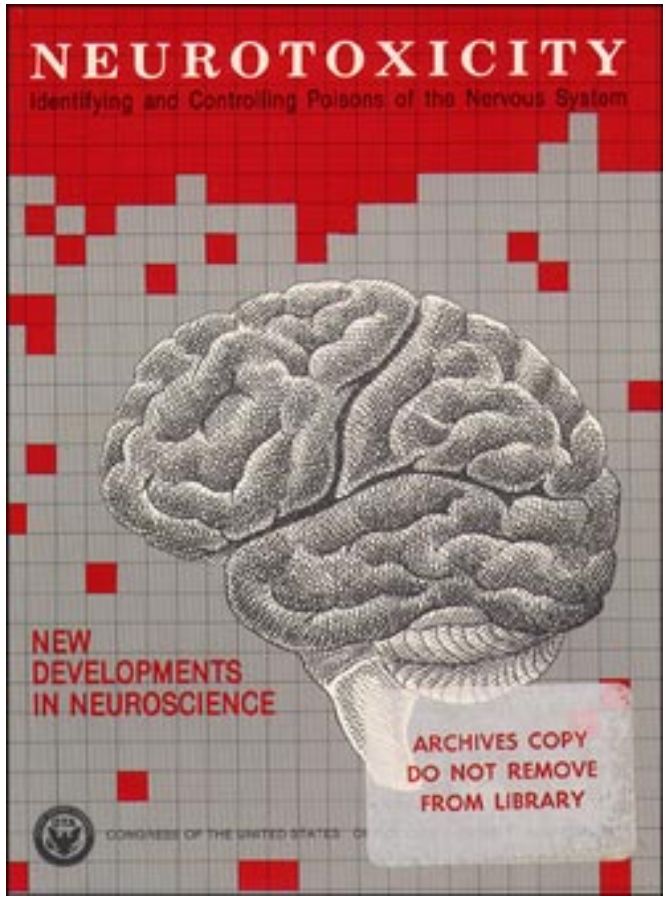

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Foreword

Extraordinary developments in the neuroscience in recent years have been paralleled by a growing congressional interest in their policy implications. The designation of the 1990s by the 101st Congress as the "Decade of the Brain" is one indication of the promise shown by scientific advances for treating diseases of the nervous system and for increased general understanding of the human mind. Other advances, however, have led us to the disturbing realization that many commonly used chemicals can adversely affect the human nervous system. Concern about this issue provided the motivation for hearings held in October 1985 on ''Neurotoxins in the Home and in the Workplace' by the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology.

Another result of heightened congressional interest was a request that OTA undertake a series of assessments on major public policy issues related to the neuroscience. Requesting committees included the House Committees on Science, Space, and Technology; Energy and Commerce; Appropriations; and Veterans' Affairs; and the Senate Subcommittee on Science, Technology, and Space of the Committee on Commerce, Science, and Transportation. In addition, the Senate Committee on Environment and Public Works recently requested a study of the noncancer health risks posed by toxic substances. This Report, the first of the neuroscience series, discusses the risks posed by neurotoxic substances—substances that can adversely affect the nervous system—and evaluates the Federal research and regulatory programs now in place to address these risks.

One finding of this Report is that considerably more research and testing are necessary to determine which substances have neurotoxic potential. Neurotoxic effects can often go unrecognized because symptoms are varied and may not appear for months or even years. Adverse effects range from impaired movement, anxiety, and confusion to memory loss, convulsions, and death. Another important finding is the need for greater public awareness. Neurotoxic chemicals constitute a major public health threat; the social and economic consequences of excessive exposure to them are potentially very large. Minimizing exposure requires action not just by regulatory and other public officials, but also by individual citizens who can take steps to avoid these substances both at home and in the workplace.

Many individuals and institutions contributed their time and expertise to the project. Scientists and regulatory officials in several Federal agencies and experts in academia and industry served on the project's advisory panel, in workshop groups, and as reviewers. OTA gratefully acknowledges the assistance of these contributors. As with all OTA assessments, however, responsibility for the content of the Report is OTA's alone and does not necessarily constitute the consensus or endorsement of the advisory panel or the Technology Assessment Board.

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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory and study panel members. The panels do not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

Neurotoxicity

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[1]Through September 1989.
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