

# **RECOGNITION AND MANAGEMENT OF PESTICIDE POISONINGS**

*Sixth Edition • 2013*

**James R. Roberts, M.D., M.P.H.**

*Professor of Pediatrics, Medical University of South Carolina*

**J. Routt Reigart, M.D.**

*Professor Emeritus, Medical University of South Carolina*

**Support for this publication was provided by:**

Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (7506P)  
Washington, DC 20460

**To access the electronic version of this manual please visit:**

<http://www2.epa.gov/pesticide-worker-safety>

This manual was developed under Cooperative Agreement No. X8-83384201, awarded by the U.S. Environmental Protection Agency (EPA) to the Medical University of South Carolina. The design and printing of this manual was facilitated by the National Association of State Departments of Agriculture Research Foundation (NASDARF) under the NASDARF Cooperative Agreement with EPA, No. X8-83456201. The information in this publication does not in any way replace or supersede the restrictions, precautions, directions or other information on the pesticide label or any other regulatory requirements, nor does it necessarily reflect the position of the EPA.

# Table of Contents

## Section I. General Information

1. Introduction.....	2
2. Making the Diagnosis.....	13
a. Data Collection on Acute Pesticide Exposed Patient .....	26
3. General Principles in the Management of Acute Pesticide Poisonings .....	29

## Section II. Insecticides

4. Pyrethrins and Pyrethroids .....	38
5. Organophosphate Insecticides.....	43
6. N-Methyl Carbamate Insecticides.....	56
7. Organochlorines.....	63
8. Biologicals and Insecticides of Biological Origin.....	70
9. Other Insecticides and Acaricides .....	80

## Section III. Herbicides

10. Chlorophenoxy Herbicides.....	98
11. Pentachlorophenol and Dinitrophenolic Pesticides .....	103
12. Paraquat and Diquat.....	110
13. Other Herbicides .....	118

## Section IV. Other Pesticides

14. Insect Repellents.....	128
15. Arsenical Pesticides.....	135
16. Fungicides.....	143
17. Fumigants.....	161
18. Rodenticides.....	173
19. Miscellaneous Pesticides, Synergists, Solvents and Adjuvants .....	188
20. Disinfectants .....	200

## Section V. Chronic Effects

21. Chronic Effects .....	212
---------------------------	-----

## Section VI. Appendixes

Appendix A: Detailed Occupational/Environmental Exposure History .....	240
Appendix B: Key Competencies for Clinicians .....	242

## Section VII. Indexes

Index of Signs and Symptoms of Acute Poisoning .....	244
Index of Pesticide Products .....	257