


# Handbook on the Toxicology of Metals, Fourth Edition

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**Handbook on the Toxicology of Metals, Fourth Edition** From Academic Press

*Handbook on the Toxicology of Metals, Fourth Edition* bridges the gap between established knowledgebase and new advances in metal toxicology to provide one essential reference for all those involved in the field. This book provides comprehensive coverage of basic toxicological data, emphasizing toxic effects primarily in humans, but also those of animals and biological systems in vitro. The fourth edition also contains several new chapters on important topics such as nanotoxicology, metals in prosthetics and dental implants, gene-environment interaction, neurotoxicology, metals in food, renal, cardiovascular, and diabetes effects of metal exposures and more.

Volume I covers “General Considerations” and Volume II is devoted to “Specific Metals.” A multidisciplinary resource with contributions from internationally-recognized experts, the fourth edition of the *Handbook on the Toxicology of Metals* is a prominent and indispensable reference for toxicologists, physicians, pharmacologists, engineers, and all those involved in the toxicity of metals.

- Contains 61 peer reviewed chapters dealing with the effects of metallic elements and their compounds on biological systems
- Includes information on sources, transport and transformation of metals in the environment and on certain aspects of the ecological effects of metals to provide a basis for better understanding of the potential for adverse effects on human health
- Covers the toxicology of metallic nanomaterials in a new comprehensive chapter
- Metal toxicology in developing countries is dealt with in another new chapter emphasizing the adverse effects on human health by the inadequate handling of "ewaste”
- Other new chapters in the 4th edition include:  Toxic metals in food; Toxicity of metals released from medical devices; Gene-environment interactions; Neurotoxicology of metals; Cardiovascular disease; Renal effects of exposure to metals; Gold and gold mining; Iridium; Lanthanum; Lithium and Rhodium

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## Editorial Review

Review
"The handbook is a weighty collection of 47 essays in the fields of toxicology and ecology of metals, reflecting a wide range of specialist knowledge from authors of several parts of theworld. It promotes awareness of health threats of the general public as well as of professionals in various occupations, constituting a valuable reference source for physicians, toxicologists, scientists in several areas, legislators and managers of environmental and occupational safety organizations. The scope of the handbook is wide and multidisciplinary, integrating human and environmental ecology. It is desireable that the handbook will find its way to many bookshelves at hospitals, industrial and governmental libraries and several research institutes in every part of the world."--***Science of The Total Environment***

About the Author
Dr Gunnar F. Nordberg, MD, PhD, is an emeritus Professor at Umea University, Umea, Sweden, where he served as chairman of the Department of Environmental and Occupational Medicine for many years. He has also worked as a scientist at the International Agency for Research on Cancer, Lyon, France and as a Professor and chairman at the Department of Environmental Medicine, Odense University, Denmark. He has published more than 270 papers in Scientific Journals and International Handbooks. In addition, he edited or co-edited 23 Scientific Books and participated in International Task Groups evaluating Risks of Environmental Agents which resulted in 25 international books. Some of these publications resulted from his activities as a chairman of the Scientific Committee on the Toxicology of Metals, International Commission on Occupational Health. He is presently the Task Group Chairman of Cadmium Risk Assessment in the Toxicology and Risk Assessment Group of the International Union of Pure and Applied Chemistry. His Scientific Publications are mainly on Toxicology and Epidemiology of environmental agents, particularly metals. He has coordinated EU- projects on Environmental Epidemiology and Toxicology of Metals and participated as an active scientist in several such projects. He has been the principal investigator of many research projects funded by Swedish funding Agencies and is presently actively involved in such research. He is one of the editors of a Textbook in Swedish “Arbets- och Miljömedicin”, latest (3rd) Edition 2010. Chief Editor, Handbook on the Toxicology of Metals, 3rd Ed, published 2007 by Academic Press/Elsevier, new 4th edition publishing October 2014. He has extensive experience as an expert serving Swedish and International Authorities such as the Swedish National Board of Health (Socialstyrelsen), Japan Food Safety Agency, US Environmental Protection Agency, National Institute for Environmental Health Studies (NIEHS), Agency for Toxic Substances and Disease Registry (ATSDR) USA, World Health Organization HQ, Geneva/International Program on Chemical Safety; International Agency for Research on Cancer IARC, Lyon, France, World Health Organization, Europe/European Environment Agency, Copenhagen; European Food Safety Authority (EFSA), Parma, Italy.

Dr. Fowler began his scientific career at the National Institute of Environmental Health Sciences prior to becoming Director of the University of Maryland System-wide Program in Toxicology and Professor at the University of Maryland School of Medicine. He then served as Associate Director for Science in the Division of Toxicology and Environmental Medicine at Agency for Toxic Substances and Disease Registry (ATSDR). He is currently a private consultant and Co-owner of Toxicology Risk Assessment Consulting Services (TRACS), LLC. In addition, Dr. Fowler serves as an Adjunct Professor, Emory University Rollins School of Public Health and Presidents Professor of Biomedical Sciences, Center for Alaska Native Health Research (CANHR) at the University of Alaska- Fairbanks. Dr. Fowler, is an internationally recognized expert on the toxicology of metals and has served on a number of State, National and International

Committees in his areas of expertise. These include the Maryland Governor's Council on Toxic Substances (Chair), various National Academy of Sciences / National Research Council Committees, the USEPA Science Advisory Board and Fulbright Scholarship review committee for Scandinavia (Chair, 2000-2001). ). In 2016, he became an Inaugural Member of the Fulbright 1946 Society. He has also served as a temporary advisor to the World Health Organization (WHO) and the International Agency for Research Against Cancer (IARC) for a number of toxicology and risk assessment issues and has been recently appointed as a member of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) for the period 2016-2020. Dr. Fowler has been honored as a Fellow of the Japanese Society for the Promotion of Science (JSPS), a Fulbright Scholar and Swedish Medical Research Council Visiting Professor at the Karolinska Institute, Stockholm, Sweden and elected as a Fellow of the Academy of Toxicological Sciences. His more recent awards include a CDC/ATSDR, Honor Award for Excellence in Leadership Award 2010, The USP Toxicology Committee 2010-2015. The USP Elemental Impurities Panel and the 2014 U.S. Pharmacopea Award for an Innovative Response to Public Health Challenges (Group Award). He was appointed to the USP Nanotechnology Subcommittee in 2015- .Dr. Fowler was previously elected to the Council of the Society of Toxicology (2005-2007), the Board of Directors of the Academy of Toxicological Sciences (2006-2009), and more recently, to the Council of the Society for Risk Analysis (2014-2017He is the Federal Legislative and National Active and Retired Federal Employees Association (NARFE)-PAC Chair for the Rockville Maryland Chapter of NARFE. Dr. Fowler is the current President of the Rotary Club of North Bethesda, Maryland (2016-2017) and was selected as Rotarian of the Year in 2015 for his work in developing a taxi-based program to help persons with disabilities gain independence via reliable transportation to work. Dr. Fowler is the author of over 260 research papers and book chapters dealing with molecular mechanisms of metal toxicity, molecular biomarkers for early detection of metal-induced cell injury and application of computational toxicology for risk assessment. He has been the editor, co-editor or author of 8 books or monographs on metal toxicology and mechanisms of chemical - induced cell injury, molecular biomarkers and risk assessment and computational toxicology. Dr. Fowler is currently focused on the global problem of electronic waste in developing countries. He serves on the editorial boards of a number of scientific journals in toxicology and is an Associate Editor of the journal Toxicology and Applied Pharmacology and a past Associate Editor of Environmental Health Perspectives (2007-2016).

Dr Monica Nordberg, Ph.D. is an emerita Professor at Karolinska Institutet (KI), Institute of Environmental Medicine, Stockholm, Sweden. She has served as chair of the Department of Environmental Hygiene, as member, Karolinska Institutet Study Program for Community Medicine, member of Education Policy Committee for Toxicology and Public Health, KI, Stockholm for many years. She has published 175 scientific articles, book chapters and review articles dealing with biochemical mechanisms and health effects related to exposure to metals mainly cadmium, lead and mercury and interaction with selenium. She is one of the editors of a Textbook in Swedish "Arbets- och Miljömedicin", latest (3:rd) Edition 2010. Monica Nordberg is a co- editor and author, of the Handbook on the Toxicology of Metals 3rd edition, Academic Press/Elsevier, 2007 and, for the new 4th edition 2015. This work is within the framework of Scientific Committee on the Toxicology of Metals under International Commission on Occupational Health (SCTM/ICOH) which she served as secretary, chair and presently as former chair. She served as titular member of the Chemistry and Human Health of International Union of Pure and Applied Chemistry issuing recommendations regarding definitions and concepts. She was the Swedish representative in the Management Committee of COST Action, member EU Strategy Environment and Health, SCALE, Technical Working Group Indicators and Priority Diseases. She has experience as an expert serving Japan Food Safety Agency, US Environmental Protection Agency, National Institute for Environmental Health Studies (NIEHS), Agency for Toxic Substances and Disease Registry (ATSDR) USA, World Health Organization HQ, Geneva/International Program on Chemical Safety. Monica Nordberg is a full member of different societies such as Society of Toxicology, USA.

## Users Review

**From reader reviews:**

**William Grimm:**

This Handbook on the Toxicology of Metals, Fourth Edition book is not really ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book is usually information inside this guide incredible fresh, you will get facts which is getting deeper a person read a lot of information you will get. This particular Handbook on the Toxicology of Metals, Fourth Edition without we comprehend teach the one who looking at it become critical in thinking and analyzing. Don't become worry Handbook on the Toxicology of Metals, Fourth Edition can bring any time you are and not make your bag space or bookshelves' grow to be full because you can have it inside your lovely laptop even phone. This Handbook on the Toxicology of Metals, Fourth Edition having excellent arrangement in word in addition to layout, so you will not truly feel uninterested in reading.

**Karen Strickland:**

The feeling that you get from Handbook on the Toxicology of Metals, Fourth Edition will be the more deep you searching the information that hide into the words the more you get serious about reading it. It doesn't mean that this book is hard to know but Handbook on the Toxicology of Metals, Fourth Edition giving you thrill feeling of reading. The article writer conveys their point in particular way that can be understood by simply anyone who read the item because the author of this publication is well-known enough. This specific book also makes your own vocabulary increase well. That makes it easy to understand then can go along with you, both in printed or e-book style are available. We highly recommend you for having this particular Handbook on the Toxicology of Metals, Fourth Edition instantly.

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