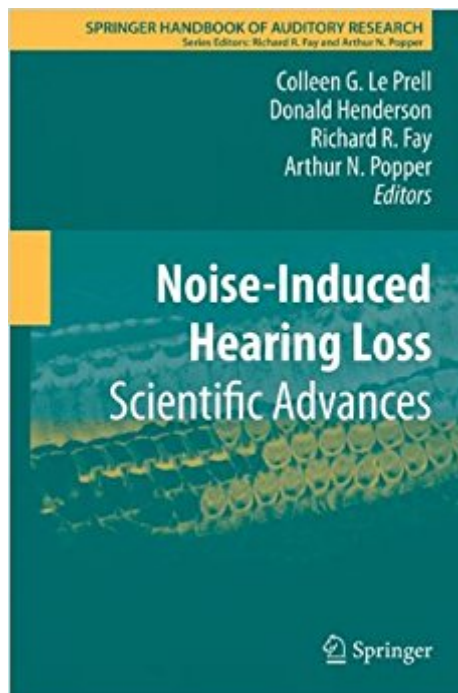




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# Noise-Induced Hearing Loss: Scientific Advances (Springer Handbook Of Auditory Research)



## Synopsis

Exposure to loud noise continues to be the largest cause of hearing loss in the adult population. The problem of NIHL impacts a number of disciplines. US standards for permissible noise exposure were originally published in 1968 and remain largely unchanged today. Indeed, permissible noise exposure for US personnel is significantly greater than that allowed in numerous other countries, including for example, Canada, China, Brazil, Mexico, and the European Union. However, there have been a number of discoveries and advances that have increased our understanding of the mechanisms of NIHL. These advances have the potential to impact how NIHL can be prevented and how our noise standards can be made more appropriate.

## Book Information

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## Customer Reviews

From the reviews: “The book relates psychophysically, via loudness factors the damage which occurs to outer hair cells, inner hair cells, basilar membrane and the cochlea during high or low pitch loud auditory stimuli. This book will be of great interest to psychophysicists, brain researchers, audiologists, ENT doctors, graduate students, advanced undergraduate neurophysiology majors, etc. I wholeheartedly recommend this book to the academic community.” (Joseph J. Grenier, .com, October, 2013) “It is from a series of volumes on auditory research aimed at graduate students, post-doctoral researchers and clinical investigators. It concentrates on recent advances in the understanding of mechanisms

associated with NIHL. The book points to the future use of therapeutic antioxidants and other agents as a potential protection for the inner ear! For an occupational health practitioner, this is one for the reference library. (Ian J. Lawson, Occupational Medicine, Vol. 62 (6), September, 2012)

Exposure to loud noise continues to be one of the largest causes of hearing loss in the adult population, already affecting some 15 percent of Americans between the ages of 20 and 69. There have been a number of discoveries and advances that have increased our understanding of the mechanisms of Noise-Induced Hearing Loss (NIHL). These advances have the potential to impact how NIHL can be prevented and how our noise standards can be made more appropriate. Noise-Induced Hearing Loss describes the effect of environmental noise on hearing, provides important background on the subject, and also explores the broader issues currently arising on effects of noise on non-human vertebrates. Perspectives on Noise-Induced Hearing Loss Colleen G. Le Prell and Donald Henderson The Public Health Significance of Noise-Induced Hearing Loss Peter M. Rabinowitz Noise-Induced Hearing Loss and Tinnitus: Challenges for the Military Marjorie A. M. Grantham The Use of Kurtosis Measurement in the Assessment of Potential Noise Trauma Donald Henderson and Roger P. Hamernik Noise-Induced Structural Damage to the Cochlea Bohua Hu Neural Coding of Sound with Cochlear Damage Eric D. Young Suprathreshold Auditory Processing in Noise-Induced Hearing Loss Mini N. Shrivastav The Neurobiology of Noise-Induced Tinnitus James A. Kaltenbach and Ryan Manz Effects of Early Noise Exposure on Subsequent Age-Related Changes in Hearing Eric C. Bielefeld Effects of Exposure to Chemicals on Noise-Induced Hearing Loss Thais C. Morata and Ann-Christin Johnson Hearing Protection Devices: Regulation, Current Trends, and Emerging Technologies John G. Casali Prevention of Noise-Induced Hearing Loss: Potential Therapeutic Agents Colleen G. Le Prell and Jianxin Bao Frontiers in the Treatment of Hearing Loss Tatsuya Yamasoba, Josef M. Miller, Mats Ulfendahl, and Richard A. Altschuler About the Editors Colleen Le Prell is an Associate Professor in the Department of Speech, Language, and Hearing Sciences and Director of the Hearing Research Center at the University of Florida. Donald Henderson is a Professor in the Department of Communication Disorders and Sciences at State University of New York (SUNY) at Buffalo. Richard R. Fay is Distinguished Research Professor of Psychology at Loyola University Chicago. Arthur N. Popper is a Professor in the Department of Biology and Co-Director of the Center for Comparative and Evolutionary Biology of Hearing at the University of Maryland, College Park. About the Series: The Springer Handbook of Auditory Research presents a

series of synthetic reviews of fundamental topics dealing with auditory systems. Each volume is independent and authoritative; taken as a set, this series is the definitive resource in the field.Ã Â

Title: Noise Induced Hearing Loss: Scientific AdvancesReviewer: Joseph J Grenier MD PhDSeries Physiology of the Auditory Nervous SystemEditors: Fay & PopperThe book relates psychophysically, via loudness factors the damage which occurs to outer hair cells, inner hair cells, basilar membrane and the cochlea during high or low pitch loud auditory stimuli. It maps this psychophysically and establishes a clear brain map for future research. They unfold layer per layer and in doing so, paint a remarkable picture of the dangers of certain occupations and jobs in heavy industry. This book will be of great interest to psychophysicists, brain researchers, audiologists, ENT doctors, graduate students, advanced undergraduate neurophysiology majors, etc. I wholeheartedly recommend this book to the academic community.

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