Record Nr. UNINA9910437618503321 Autore Puria Sunil Titolo The middle ear: science, otosurgery, and technology // Sunil Puria, Richard R. Fay, Arthur N. Popper, editors New York, : Springer, 2013 Pubbl/distr/stampa 1-4614-6591-5 **ISBN** Edizione [1st ed. 2013.] Descrizione fisica 1 online resource (xvi, 308 pages): illustrations (some color) Collana Springer Handbook of Auditory Research, , 0947-2657;; 46 Altri autori (Persone) FayRichard R PopperArthur N Disciplina 616.2 Soggetti Middle ear - Anatomy Middle ear Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia "ISSN: 0947-2657." Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto 1. The Middle Ear: Science and Applications Sunil Puria -- 2. The Evolution and Development of Middle Ears in Land Vertebrates Geoffrey A. Manley and Ulrike J. Sienknecht -- 3. Comparative Middle-Ear Structure and Function in Vertebrates John J. Rosowski -- 4. Function and Acoustics of the Normal and Diseased Middle Ear Susan E. Voss. Hideko Heidi Nakajima, and Alexander M. Huber -- 5. Quasi-Static Pressures in the Middle-Ear Cleft Joris J. J. Dirckx, Yael Marcusohn, and Michael L. Gaihede -- 6. Bone Conduction and the Middle Ear Stefan Stenfelt -- 7. Modeling of Middle-Ear Mechanics W. Robert J. Funnell. Nima Maftoon, and Willem F. Decraemer -- 8. Diagnostic Measurements and Imaging Technologies for the Middle Ear Gerald R. Popelka and Lisa L. Hunter -- 9. Surgical Reconstruction and Passive Prostheses Saumil N. Merchant and John J. Rosowski -- 10. Middle-Ear Hearing Devices Sunil Puria. Sommario/riassunto The middle ear plays a vital role in the sense and sensitivity of hearing. Of the various characteristics that distinguish mammals from other vertebrates, several pertain specifically to the middle-ear system, such as the presence of three middle-ear bones and the four-layer composite structure of the tympanic membrane. The Middle Ear attempts to elucidate the role this system plays in sound transmission.

as viewed from both scientific and clinical perspectives. •

The Middle

Ear: Science and Applications Sunil Puria · The Evolution and Development of Middle Ears in Land Vertebrates Geoffrey A. Manley and Ulrike J. Sienknecht · Comparative Middle-Ear Structure and Function in Vertebrates John J. Rosowski · Function and Acoustics of the Normal and Diseased Middle Ear Susan E. Voss, Hideko Heidi Nakajima, Alexander M. Huber, and Christopher Shera · Quasi-Static Pressures in the Middle-Ear Cleft Joris J. J. Dirckx, Yael Marcusohn, and Michael L. Gaihede · Quasi-Static Pressures in the Middle-Ear Cleft Joris J. J. Dirckx, Yael Marcusohn, and Michael L. Gaihede Bone Conduction and the Middle Ear Stefan Stenfelt · Modeling of Middle-Ear Mechanics W. Robert J. Funnell, Nima Maftoon, and Willem F. Decraemer -Diagnostic Measurements and Imaging Technologies for the Middle Ear Gerald R. Popelka and Lisa L. Hunter Surgical Reconstruction and Passive Prostheses Saumil N. Merchant and John J. Rosowski · Middle-Ear Hearing Devices Sunil Puria About the Editors: Sunil Puria is Consulting Associate Professor in the Departments of Mechanical Engineering and Otolaryngology-HNS at Stanford University. Arthur N. Popper is 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. Richard R. Fay is Distinguished Research Professor of Psychology at Lovola University Chicago. 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 .