

# Contents

Introduction: Møller A.R.

History of Cochlear Implants and Auditory Brainstem Implants: Møller A.R.

## Cochlear Implants

Surgical Aspects of Cochlear Implantation: Mechanisms of Insertional Trauma: Roland P.S.; Wright C.G.

Histopathology of the Inner Ear Relevant to Cochlear Implantation: Nadol J.B. Jr.; Eddington D.K.

Factors Influencing Spoken Language Outcomes in Children following Early Cochlear Implantation: Geers A.E.

Central Auditory Development in Children with Cochlear Implants: Clinical Implications: Sharma A.; Dorman M.F.

Brain Plasticity under Cochlear Implant Stimulation: Kral A.; Tillein J.

Speech Processing in Vocoder-Centric Cochlear Implants: Loizou P.C.

## Auditory Brainstem Implants

Auditory Brainstem Implants: Surgical Aspects: Fayad J.N.; Otto S.R.; Brackmann D.E.

A Guide to the Positioning of Brainstem Implants Using Intraoperative Electrical Auditory Brainstem Responses: Nevison B.

Auditory Outcomes in Tumor vs. Nontumor Patients Fitted with Auditory Brainstem Implant: Colletti V.

## Physiological Basis for Cochlear and Auditory Brainstem Implants

Basis of Electrical Stimulation of the Cochlea and the Cochlear Nucleus: Shepherd R.K.; McCreery D.B.

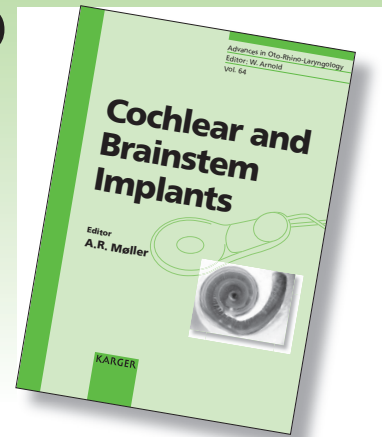
Physiological Basis for Cochlear and Auditory Brainstem Implants: Møller A.R.

Author Index  
Subject Index

# New aspects and findings

# Cochlear and Brainstem Implants

Editor  
Aage R. Møller



Today cochlear implants are the most successful of all prostheses of the nervous system. They are used in individuals who are deaf or suffer from a severe hearing deficiency caused by loss of cochlear hair cells. Auditory brainstem implants provide stimulation of the cochlear nucleus and are used in patients with an auditory nerve dysfunction, a deformed cochlea which does not allow cochlear implantation, or traumatic auditory nerve injury.

In this volume different aspects of cochlear implantation such as the role of neural plasticity, the interaction with the development of the auditory system, and the optimal time of implantation in children (sensitive periods) are discussed in detail. Further, the processors and the algorithms used in modern cochlear implants are described. The second part is devoted to auditory brainstem implants. It describes surgical techniques, methods for intraoperative testing as well as speech processing. It also deals with electrical stimulation of neural tissue and the neurophysiologic basis for cochlear and brainstem implants.

The publication provides the latest scientific and clinical knowledge on cochlear and brainstem implants and is highly recommended to audiologists, otolaryngologists and also neurosurgeons.

Advances in Oto-Rhino-Laryngology, Vol. 64  
**Cochlear and Brainstem Implants**

Editor: Møller, A. (Dallas, Tex.)  
VIII + 228 p., 84 fig., 9 in color, 4 tab., hard cover, 2006  
CHF 209.– / EUR 149.50 / USD 190.00  
Prices subject to change  
EUR price for Germany, USD price for USA only  
ISBN-10: 3-8055-8157-2  
ISBN-13: 978-3-8055-8157-8

Fields of Interest: ORL; Audiology, Neurosurgery, Communication Disorders, Pediatrics, Neurobiology

**KARGER**

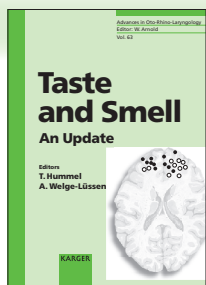
Presents complete coverage from basic research to clinical studies

# Advances in Oto-Rhino-Laryngology

Editor W. Arnold (Munich)  
ISSN 0065-3071

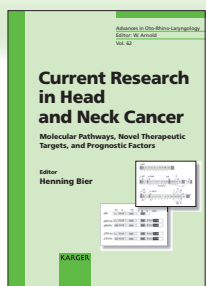
Material for each volume in this series has been skillfully selected to document the most active areas of otorhinolaryngology and related specialties, such as neuro-otology and oncology. The series reproduces results from basic research and clinical studies pertaining to the pathophysiology, diagnosis, clinical symptoms, course, prognosis and therapy of a variety of ear, nose and throat disorders. The numerous papers correlating basic research findings and clinical applications are of immense value to all specialists engaged in the ongoing efforts to improve management of these disorders. Acting as a voice for its field, the series has also been instrumental in developing subspecialties into established specialties.

[www.karger.com/adorl](http://www.karger.com/adorl)



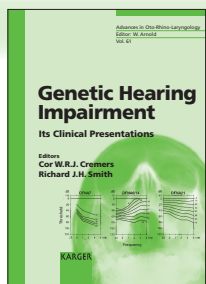
Vol. 63  
**Taste and Smell  
An Update**

Editors: Hummel, T. (Dresden); Welge-Lüssen, A. (Basel)  
VIII + 294 p., 33 fig., 1 in color, 12 tab., hard cover, 2006  
CHF 226.- / EUR 161.50 / USD 205.50  
ISBN 3-8055-8123-8 / ISBN 978-3-8055-8123-3



Vol. 62  
**Current Research in Head and Neck Cancer  
Molecular Pathways, Novel Therapeutic Targets,  
and Prognostic Factors**

Editor: Bier, H. (Düsseldorf)  
VI + 208 p., 52 fig., 22 tab., hard cover, 2005  
CHF 198.- / EUR 141.50 / USD 180.00  
ISBN 3-8055-7789-3 / ISBN 978-3-8055-7789-2



Vol. 61  
**Genetic Hearing Impairment  
Its Clinical Presentations**

Editors: Cremers, C.W.R.J. (Nijmegen);  
Smith, R.J.H. (Iowa City, Iowa)  
XIV + 248 p., 79 fig., 23 tab., hard cover, 2002  
CHF 224.- / EUR 160.- / USD 195.00  
ISBN 3-8055-7449-5 / ISBN 978-3-8055-7449-5

Vol. 1-60 available,  
please ask for details

Prices subject to change  
EUR price for Germany, USD price for USA only

## Order Form

### Advances in Oto-Rhino-Laryngology

Please send

copy/ies: Vol. 64  
**Cochlear and Brainstem Implants**  
CHF 209.- / EUR 149.50 / USD 190.00  
ISBN-10: 3-8055-8157-2  
ISBN-13: 978-3-8055-8157-MM

copy/ies: \_\_\_\_\_  
3-8055-\_\_\_\_\_

copy/ies: \_\_\_\_\_  
3-8055-\_\_\_\_\_

the book series Advances in  
**Oto-Rhino-Laryngology**  
on continuation beginning with vol.

information on vols. 1-60

For easy ordering or further information about the series  
log on to: [www.karger.com/adorl](http://www.karger.com/adorl)

Postage and handling free with prepayment

#### Payment

Check enclosed  Please bill me

Please charge this order to my credit card

American Express  Diners  
 Visa  Eurocard  Mastercard

Card No.:

Exp. date:

Name/Address (please print):

Date/Signature:

Orders can be placed at agencies, bookstores, directly with the publisher,  
or with any Karger distributor.

**S. Karger AG, P.O. Box, 4009 Basel (Switzerland)**  
Fax +41 61 306 12 34, E-Mail orders@karger.ch

**USA:** S. Karger Publishers, Inc., 26 West Avon Road, P.O. Box 529,  
Farmington, CT 06085 (USA), Toll free: 1-800-828-5479

**Germany:** S. Karger GmbH, 79115 Freiburg

**France:** Librairie Medi-Sciences Sarl, 75007 Paris

**United Kingdom, Ireland:** S. Karger AG, London SW6 1RU

**Baltic States:** Bookshop Krisostomus, 50002 Tartu (Estonia)

**Gulf Council Countries, Iran, Middle East, North Africa, Turkey:**

Trans Middle East Internat. Distribution Co. Ltd., KaSha,  
Amman 11953 (Jordan)

**India, Bangladesh, Sri Lanka:** Panther Publishers Private Ltd.,  
Bangalore 560 034 (India)

**ASEAN countries, Hong Kong, Taiwan, South Korea:**

APAC Publishers Services Pte. Ltd., Singapore 339 940

**People's Republic of China:** Creative Consulting (Shanghai) Co., Ltd.,  
Shanghai, China 200021

**Japan:** Karger Japan, Inc., Tokyo 113-0034

**Australia:** DA Information Services, Mitcham, Vic. 3132 (Australia)

For details see [www.karger.com/worldwide](http://www.karger.com/worldwide)

KP 06123 (16.06.06) Printed in Switzerland (1.24, 1.41)

**KARGER**