Klaus Böheim
Department of Otorhinolaryngology
Head and Neck Surgery
Landesklinikum St. Pölten
Propst Führerstrasse 4
3100 St. Pölten (Austria)

Bibliographic Indices. This publication is listed in bibliographic services, including Current Contents®.

Disclaimer. The statements, opinions and data contained in this publication are solely those of the individual authors and contributors and not of the publisher and the editor(s). The appearance of advertisements in the book is not a warranty, endorsement, or approval of the products or services advertised or of their effectiveness, quality or safety. The publisher and the editor(s) disclaim responsibility for any injury to persons or property resulting from any ideas, methods, instructions or products referred to in the content or advertisements.

Drug Dosage. The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

All rights reserved. No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher.

© Copyright 2010 by S. Karger AG, P.O. Box, CH–4009 Basel (Switzerland)
www.karger.com
Printed in Switzerland on acid-free and non-aging paper (ISO 9706) by Reinhardt Druck, Basel
ISSN 0065–3071
Contents

VII Preface
  Böheim, K. (St. Pölten)

1 The Vibrant Soundbridge: Design and Development
  Ball, G.R. (Innsbruck)

14 Cost-Effectiveness of Implantable Middle Ear Hearing Devices
  Snik, A.; Verhaegen, V.; Mulder, J.; Cremers, C. (Nijmegen)

20 Indications and Candidacy for Active Middle Ear Implants
  Wagner, F.; Todt, I.; Wagner, J.; Ernst, A. (Berlin)

27 Clinical Results with an Active Middle Ear Implant in the Oval Window
  Hüttenbrink, K.B.; Beutner, D. (Cologne); Zahnert, T. (Dresden)

32 Experiments on the Coupling of an Active Middle Ear Implant to the Stapes Footplate
  Zahnert, T.; Bornitz, M. (Dresden); Hüttenbrink, K.B. (Cologne)

38 The Vibrant Soundbridge for Conductive and Mixed Hearing Losses:
  European Multicenter Study Results
  Baumgartner, W.-D. (Wien); Böheim, K. (St. Pölten); Hagen, R.; Müller, J. (Würzburg);
  Lenarz, T. (Hannover); Reiss, S. (Wien); Schlögel, M. (St. Pölten); Mlynski, R. (Würzburg);
  Mjoallal, H. (Hannover); Colletti, V. (Verona); Opie, J. (Innsbruck)

51 Clinical Experience with the Active Middle Ear Implant Vibrant Soundbridge in
  Sensorineural Hearing Loss
  Pok, S.M.; Schlögel, M.; Böheim, K. (St. Pölten)

59 The Esteem System: A Totally Implantable Hearing Device
  Maurer, J.; Savvas, E. (Koblenz)

72 Totally Implantable Active Middle Ear Implants: Ten Years’ Experience at the
  University of Tübingen
  Zenner, H.P.; Rodriguez Jorge, J. (Tübingen)

85 Author Index

86 Subject Index
I would like to sincerely thank the editor of *Advances in Oto-Rhino-Laryngology*, Prof. Wolfgang Arnold, for asking me to be guest editor for a book on active middle ear implants. It was a delightful undertaking for me to organize this anthology and to invite the authors who were selected from the many experts in the various topics of this broad field.

The publication of this book is very timely considering the recently expanded methods for coupling active middle ear implants to the middle ear – to the round window or in combination with passive middle ear prostheses. It is also an opportunity to review the currently marketed systems and to evaluate how they can be used to help hearing impaired patients. Over the past decade, we have witnessed a continuous evolution in the expansion of the patient selection criteria from purely sensorineural hearing losses to conductive and mixed hearing losses in difficult-to-treat ears.

This book begins with a fascinating and authentic history of active middle ear implants, written by one of the main pioneers in this field. In the following chapters, the currently marketed devices and their application are described. Technical improvements have resulted not only in better speech processing but also in fully implantable middle ear implants using electromagnetic stimulators. An additional development is the launch of a new, fully implantable device with a piezoelectric stimulator. Clinical experiences and results from a large group of patients, using the range of devices, are presented in this book.

I would like to extend my gratitude to all authors who prepared exceptionable manuscripts to share their experience. I am particularly thankful to Stefan-Marcel Pok for his hard work and long hours over many nights and weekends. His assistance contributed to the success of this publication.

*Klaus Böheim*, St. Pölten