Progress in Biomedical Research

Introductory Issue
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Editorial Comment

This spring edition marks the beginning of our new quarterly publication, *Progress in Biomedical Research,* which is intended to be a platform to describe new devices and technologies. Particular importance will be placed on the clinical application of these devices by collaboration with our research and clinical partners worldwide.

Progress in Biomedical Research will also be a forum for new products being developed by Biotronik or its collaborators to solve clinical problems. This will build upon the accomplishments of the last few years covering the research areas of:

- High-efficency electrodes
- Closed-loop pacemakers
- Single-lead VDD and DDD-pacing
- Analysis of monophasic action potentials
- Antitachycardia therapy
- Electrophysiology
- Interventional cardiology

This publication will act as a medium for the dissemination of information to our current clinical partners and to generate discussion of new developments and results. Moreover, I hope that we will motivate physicians and researchers throughout the world to join in a collaborative effort with Biotronik to create innovative cardiovascular products.

In an effort to incorporate these changes as well as to emphasize our clinical and scientific objectives, I am introducing an editorial board to further widen the scope of *Progress in Biomedical Research.* The editorial staff welcomes original contributions from all sources.

I would like to express my appreciation to all of the contributors of the Biotronik Reviews published over the years. As a courtesy to all new readers, this first new issue includes a list of all previous publications.

M. Schaldach
Editor

1995 (Volume 6)

- ☐ 6:1 Clinical Experience with VDD Pacing Systems
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- ☐ 6:2 Clinical Experience with ANS-Controlled Cardiomyoplasty
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- ☐ 6:3 Three-Dimensional Finite-Element Modeling of Intracardiac Impedance
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- ☐ 6:4 New Aspects in Implantable Cardioverter / Defibrillator Development-Low Energy Defibrillation
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- ☐ 6:5 Hemodynamics and Control Aspects of Closed-Loop Rate-Responsive Pacing - a Simulation Study
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- ☐ 6:6 Analysis of Monophasic Action Potentials Measured by Fractally-Coated Leads
  Wetzig T, Bolz A, GHL K, Richter P, Gottwik M, Schaldach M
- ☐ 6:7 Validation of Monophasic Action Potentials for Detecting Neurohumoral Influences Using Special DDD Pacemakers
  Wetzig T, Bolz A, Hardt R, Hubmann M, Fischer G, Worth H, Schaldach M
- ☐ 6:9 Comparative Study with Different Rate-Adaptive Pacing Systems
  Greco OT, Beljaev OV, Res JCJ, van Woersem RJ, Malinowski K, Domashenko AA, Zhdanov AM, Revishvili AS, Khirmanov VN, Schaldach M
- ☐ 6:10 Modelling of Low Threshold Atrial Defibrillation
  Revishvili ASh, Bolz A, Schaldach M
- ☐ 6:11 Clinical Experience with ICD and Fractally-Coated Electrodes for Low Energy Defibrillation
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- ☐ 5:2 Polyurethane or Silicone as Material for Long-Term Implants - A Critical Review
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- ☐ 5:3 Essentials of Pacemaker Reliability
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- ☐ 5:4 New Aspects in Electrosimulation of the Heart
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- ☐ 5:5 Pacing and Sensing - A Comparison of Different Pacing Electrodes
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- ☐ 5:6 Analysis of Epimyorcardial ECGs from Transplanted Hearts
  Hutten H, Schreier G, Auer T, Iberer F, Tscheliessnigg KH, Schaldach M
- ☐ 5:7 Introduction to Pacemaker Reliability
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- ☐ 5:8 Clinical Experience with the New Accelerometer - driven DDDR Pacemaker, Ergos S 03
  Res JCJ, van Woersem RJ, Luttikhnis HO
- ☐ 5:9 Long-Term Follow-Up of Atrial TiN Leads for Optimization of Pacing Therapy
  Kamke W, Adamscheck Ch, Hinkel M, Gutscher A
- ☐ 5:10 Two Different Principles to Analyse Motion: Comparative Clinical Results of Rate-Adaptive Stimulation
  Malinowski K, Atmanspacher J, Weber D

1993 (Volume 4)

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- ☐ 4:2 Simulation of the Cardiovascular Mechanics During Rate-Adaptive Pacing
  Urbaszek A, Hutten H, Schaldach M
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- ☐ 4:4 Monitoring ANS Activity by Use of the Right Ventricular Impedance
  Greco OT, da Silveira LC, Parro Jr. A, Ardito RV, Schaldach M
- ☐ 4:5 Intracardiac Impedance to Determine Sympathetic Activity in Rate-Responsive Pacing
  Parro Jr. A, Greco OT, Ardito RV, Schaldach M
- ☐ 4:6 Reestablishing Chronotropy in Patients with Chagas' Heart Disease Using a New Biosensor "Closed-Loop Pacing" (ANS)
  Greco OT, Ardito RV, Lorga AM, Schaldach M
- ☐ 4:7 Pacing and Sensing Performance of Pacemaker Electrodes with Titanium Nitride and Iridium Coatings in Patients with Chagas' Heart Disease
  Ardito RV, Greco OT, Schaldach M
- ☐ 4:8 The First Clinical Experience with ANS-Controlled Rate-Responsive Pacing in Kaunas
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- ☐ 4:9 Low Polarization Pacing Leads as a Sensor for Detecting the Ventricular-Evoked Response
  Bolz A, Hubmann M, Hardt R, Riedmüller J, Schaldach M
- ☐ 4:10 Pacing and Sensing Performance of Leads with Fractally Structured Tips
  Hubmann M, Hardt R, Bolz A, Riedmüller J, Schaldach M
- ☐ 4:11 Heart Rate Adaptation Utilizing Unipolar Impedance Recording from the Right Ventricle
  Hutten H, Schaldach M
- ☐ 4:12 Myocardium Electrode Interface at the Cellular Level
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1992 (Volume 3)

- ☐ 3:1 Hybrids - an Essential for High-Reliablility Human Implant Electronics
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- ☐ 3:3 Rate-Responsive Pacing Based on Sympathetic Activity
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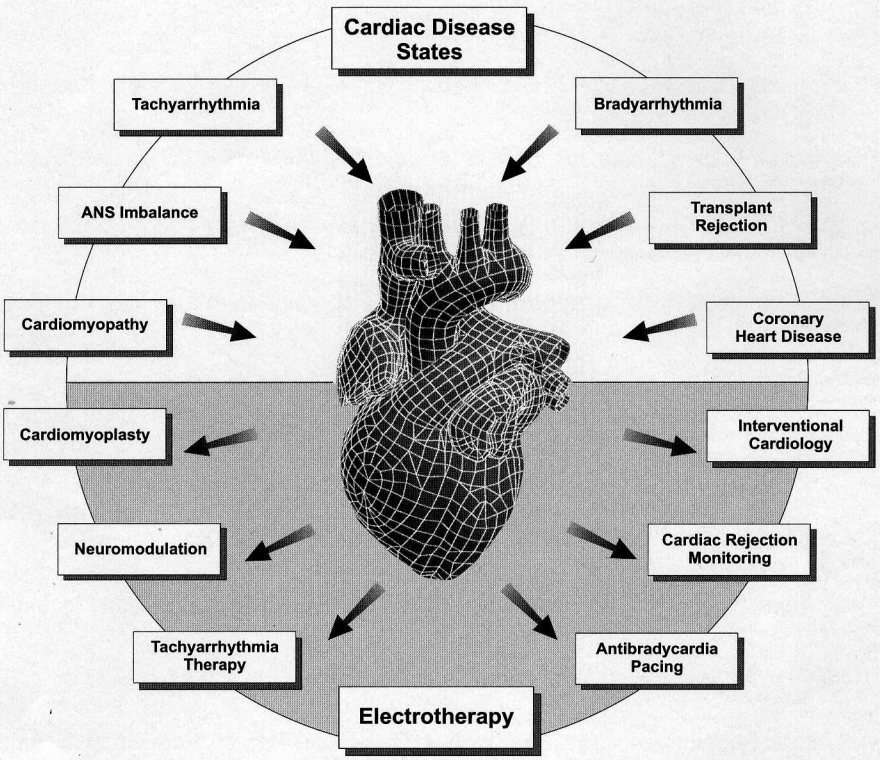
- ☐ 3:4 Use of Systolic Time Intervals as a Preoperative Diagnostic Tool for Rate-Responsive Pacing
  Rentsch W, Ebner E, von Knorre GH, Volkmann H, Weber D, Wunderlich W, Niederlag W, Hutten H, Schaldach M
- ☐ 3:5 An Implantable Neurostimulator with Programmable Logic
  Hutten H, Schaldach M

1991 (Volume 2)

- ☐ 2:1 A Physiological Approach to Different Concepts of Rate-Adaptive Cardiac Pacing
  Schaldach M, Hutten H
- ☐ 2:2 Acute and Long-Term Sensing and Pacing Performance of Pacemaker Leads which have Titanium Nitride ElectrodeTips
  Schaldach M, Bolz A, Breme J, Hubmann M, Hardt R
- ☐ 2:3 Evoked Response Recognition in Cardiac Pacing
  Schaldach M

The range of BIOTRONIK products extends over the full spectrum of the cardiology specialities. It includes the traditional strengths of BIOTRONIK, namely products and concepts for the diagnosis and therapy of bradycardia and tachyarrhythmia, including:

- Our implantable single- and dual-chamber pacemakers, which now include the innovative Inos and Inos^2 pacemakers, featuring the ANS closed-loop, rate-adaptive pacing technology.
- BIOTRONIK's range of implantable leads has been expanded to include our new SYNOX and POLYROX leads with smaller-tip diameters and BIOTRONIK's unique fractal surface structure.
- In 1995, BIOTRONIK implanted our next generation implantable cardioverter/defibrillator (ICD), the PHYLAX 06. The PHYLAX 06 was implanted with our new transvenous leads and becomes one of the smallest 4th generation ICD devices on the market.



Biotronik's commitment to increasing research and development extends worldwide. It is our goal to continue to expand our collaboration with clinical and technological partners, so that we will be able to develop innovative technologies, diagnostic tools, and new devices for the benefit of the patient in the years ahead.