



Imhoff · Beitzel · Stamer Klein · Mazzocca

Rehabilitation in Orthopedic Surgery

- An overview of surgical procedures
- Physiotherapy
- · Sports therapy



Rehabilitation in Orthopedic Surgery

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- K. Stamer
- E. Klein
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Eds.

Rehabilitation in Orthopedic Surgery

Second Edition

An overview of surgical procedures Physiotherapy Sports therapy



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Foreword

The idea for this book arose many years ago from daily cooperation with physiotherapists on patients that had recently undergone surgery. We wanted to create a tried and tested handbook that briefly presents the relevant operative and outlined steps of a surgery, as well as the major physiotherapeutic stages, in a way that is simple, understandable and demonstrated using images.

In a team of physiotherapists, ergotherapists, sports scientists, orthopedic technicians, social education workers and doctors, the courses of treatment that form understandable and comprehensible guidelines for all involved, as well as for the patients at the center of the team, must be defined. They must also continue to be useful after the time in the first surgical clinic if further treatment is to be provided in a specialized rehabilitation center or by freelance physiotherapists on an inpatient or outpatient basis. We have therefore restricted ourselves to the most important and common surgical techniques on the upper and lower extremities, as well as the spine.

Our intensive cooperation with physiotherapists and doctors from clinics in the Medical Park Group formed the foundation that we expanded into a practical handbook. Dr. Trudi Volkert, former editor at Springer publishing house, and Dr. Hubert Hörterer, former Head Physician at Medical Park St. Hubertus Clinic, again provided us with significant support at the start, and gave us the encouragement that allowed this unique work to come to life. We owe both of them our heartfelt thanks. We also received considerable support in terms of development and design from Prof. Thomas Wessinghage, current Medical Director of Medical Park Bad Wiessee St. Hubertus Clinic and his employees Knut Stamer and Elke Klein. However, the book was only made possible thanks to the generous financial contribution from Medical Park AG. The current international edition was only possible thanks to the contribution from Medi GmbH. We would also like to extend our thanks to them.

Further thanks are owed to Burkhard Schulz, the photographer, and to Kathrin Schöffmann, our model, who posed for each of the stages of physiotherapy and made them come to life over an almost endless number of sessions, as well as to Rüdiger Himmelhan for the illustrations. We would also like to thank Prof. Maximilian Rudert and Dr. Michael Ulmer, who contributed their specialist knowledge on a number of specific chapters, as well as qualified sports scientist Klaus Remuta for his assistance in creating the practical guides for stage IV.

The handbook should serve as a valuable tool, assistance, and manual for all team members supporting patients throughout the various post-surgical phases, and as a guide, without neglecting the recommendations of the surgeon and personal experience of the therapists. We are delighted to be able to present some new features as part of the second edition.

We also are very honored that Prof. Gus Mazzocca, Dr. Andreas Voss and David Lam from the University of Connecticut helped us in editing and translating the second edition of our book.

For the editors:

Andreas Imhoff and Knut Beitzel Munich, Fall 2015

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University Professor Andreas B. Imhoff

is Director of the Department for Orthopaedic Sportsmedicine at University Hospital Rechts der Isar, Technical University of Munich. He is a specialist in orthopedic surgery and traumatology, as well as sports medicine.

He was until 2014 an Executive Board member of the German Society of Orthopedics and Orthopedic Surgery (DGOOC) (First Secretary to the Management Board) and on the Executive Board of the German Society for Orthopedics and Trauma (DGOU).

Prof. Andreas B. Imhoff also holds the following positions: He was a member of the board of the German-speaking Society for Arthroscopy and Joint Surgery (AGA) from 1999 to 2013, and was Congress President in 1999 and President from 2000 to 2003. He has been an honorary member since 2013. Between 2007 and 2011, he was Chairman of the program committee of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS). He is currently an honorary member of the Arthroscopy Association of North America (AANA), honorary member of the Argentinian Shoulder Association, Corresponding Member of the Chilean Orthopaedics and Trauma Association (SCHOT), Chilean Sports Orthopaedic Association and American Society of Shoulder and Elbow (ASES), member of the board of trustees of the Association of Orthopaedic Research (AFOR) and board member of the German Knee Society (DKG). He also holds the Malaysian Federal Honorary Award of Darjah Kebesaran PANGLIMA JASA NEGARA (P.J.N.) "DATUK".

He is a member of the following associations: European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA), Société Européenne pour la Chirurgie de l'Épaule et du Coude (SECEC), American Orthopaedic Society for Sports Medicine (AOSSM), Bayerischer Sportärzteverband (Bavarian Sports Medicine Association), Deutscher Sportärzteverband (German Sports Medicine Association), Deutsche Gesellschaft für Unfallchirurgie (German Society for Traumatology; DGU), Schweizerische Gesellschaft für Orthopädie (Swiss Orthopedics Association; SGO), Deutsche Vereinigung für Schulter und Ellenbogen (German Association for Shoulders and Elbows; DVSE).

Prof. Andreas B. Imhoff is Editor in Chief for the Zeitschriften für Arthroskopie (Springer) and Operative Orthopädie und Traumatologie (Springer), and is also Assistant Editor of the Journal for Shoulder and Elbow Surgery (Elsevier) and the American Journal of Sports Medicine (AJSM). In addition, he is a consultant for the following journals: Sport-orthopädie/Sporttraumatologie (Springer), Deutsche Zeitschrift für Sportmedizin, Archives of Orthopaedic and Trauma Surgery (Springer), European Journal of Trauma and Emergency Surgery (Springer), Operative Techniques in Orthopaedics (Elsevier), Knee Surgery, Sports Traumatology, Arthroscopy (Springer).

Prof. Andreas B. Imhoff has received the following awards: Instructor in arthroscopic surgery AGA 1990, ASG Travelling Fellowship (USA, Canada and England) 1991, AGA Scientific Prize 1993, Education and Research Prize – Fellowship USA der AGA 1994/1995, Kappa Delta Young Investigator Award (AAOS/ORS) 1996, TUM nomination for the Leibnitz prize 2001, Scientific prize from the Association for Orthopaedic Research (AFOR) 2002, Center of Excellence 'Best Care' DKV 2002–2014, accreditation by the American Orthopaedic Academy AOA and ISAKOS as a teaching hospital since 1997. AGA-medi Award 2013: Structural and Biomechanical Changes in Shoulders of Junior Javelin Throwers – A Multimodal Evaluation as a Proof of Concept for a Preventive Exercise Protocol.



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He is a member of the following professional associations: European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA), Association for Arthroscopy and Joint Surgery (AGA), German Association for Shoulder and Elbow Surgery (DVSE), German Association for Sports Medicine and Preventive Medicine (DGSP), German-Aus-

trian-Swiss Association for Orthopedic-Traumatological Sports Medicine (GOTS). He is member of the Editorial Board for the Orthopaedic Journal of Sports Medicine and of the Reviewers Board for the American Journal of Sports Medicine. In 2013, he and Prof. A. B. Imhoff received the AGA medi Award for his paper entitled "Structural and Biomechanical Changes in Shoulders of Junior Javelin Throwers – A Multimodal Evaluation as a Proof of Concept for a Preventive Exercise Protocol".



Knut Stamer (Physiotherapist/Osteopathist)

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swimming A-Squad team of the German swimming association at the Beijing Olympic Games in 2008. Since 2009, he has advised the Chinese women's national athletics team in the disciplines of discus, shot put and hammer throwing. Knut Stamer specializes in the following fields: Manual therapy, sports physiotherapy, sports rehabilitation training, medical training therapy, osteopathy, neural structures, craniomandibular dysfunctions, applied kinesiology, kinesiotaping, Terapi Master training system (sling exercise system) and functional movement screen, and is part of Dr. Schleip's team of fasciae experts.



Elke Klein (Physiotherapist/Osteopathist)

is a physiotherapist and has been Department Head at Medical Park Bad Wiessee St. Hubertus since 2007. There, her patients include the athletes at cooperation partner Bavaria Olympic Training Center, the German ski association and FC Bayern Basketball. She previously worked as a physiotherapist on the team at the clinic and polyclinic for sports orthopedics at Munich Technical University. She completed her physiotherapy training at the college for Physiotherapy at Ludwig-Maximilians University in Munich.

Elke Klein also holds further training in the fields of sports physiotherapy, manual therapy, PNF, kinesiotaping, and the Terapi Master training system. This was followed by five years of study in osteopathy at the International Academy of Osteopathy (Germany).



Professor Augustus D. Mazzocca, MS, MD

is the Director of the UConn Musculoskeletal Institute and Chairman, Department of Orthopaedic Surgery at the University of Connecticut Health Center. He is the Director of the University of Connecticut Human Soft Tissue Research Laboratory, which consists of integrated translational labs incorporating cell and molecular biology, histology, biomechanics, and clinical outcomes research. He is also the Director of the University of Connecticut Bioskills Laboratory. Dr. Mazzocca holds a joint faculty appointment at the University of Hartford in the Department of Civil, Environmental, and Biomedical Engineering, College of Engineering Technology and Architecture.

International collaboration in both education and research is a top priority for Dr. Mazzocca bridging over six countries including Brazil, Japan, Austria, Germany, Italy, France and five of the seven continents. Dr. Mazzocca is internationally renowned for his work in the following areas: biceps tenodesis, distal biceps for the elbow, anatomic coracoclavicular reconstruction for the treatment of chronic acromioclavicular separation, and biologic augmentation of failed rotator cuff repair using concentrated bone marrow and platelet rich plasma. The extent of this research has led to 69 book chapters, 130 abstracts and posters and 133 peer reviewed journal articles.

Dr. Mazzocca also holds the following positions: he was the Program Director for the American Orthopaedic Society for Sports Medicine (AOSSM) for the 2015 International Meeting and a member at large for the AOSSM Nominating Committee from 2014-2015. In 2014, he served on the Upper Extremity Program Committee for Specialty Day.

Dr. Mazzocca has been a part of the American Shoulder and Elbow Society (ASES) Continuing Education Committee since 2009 and is a member of the Closed Meeting Committee for 2015 and 2016 and the ASES Continuing Education Committee from 2014-2015. He is also a member of the Arthroscopy Association of North America (AANA) Research

Committee since 2010. In 2003, Dr. Mazzocca was a founder of the New England Shoulder and Elbow Society (NESES) and continues to be part of its executive governing board since its inception in 2003. He remains an active member of AOSSM, ASES, AANA, and NESES as well as the following professional societies: American Academy of Orthopaedic Surgeons (AAOS), International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS), The American Orthopaedic Association (AOA), Orthopaedic Research Society (ORS), European Society for Surgery of the Shoulder and Elbow (ESSE), American College of Sports Medicine Member (ACSM), and the Connecticut Academy of Science and Engineering (CASE).

Dr. Mazzocca has served on the editorial board for several orthopaedic publications including: Orthopedics Today Basic Science & Technology Section Editor 2014, Orthopedics Today Editorial Board from 2013 to present, Techniques in Shoulder and Elbow Surgery, Editorial Board from 2010 to present, Associate Editor – Journal of Bone and Joint Surgery-Shoulder and Elbow Newsletter from 2011 to present, Section Editor-Arthroscopy Section for the AAOS Orthopaedic Knowledge Update 4th Edition in 2011, Co-Editor of the AAOS Monograph Disorders of the Proximal Biceps Tendon in 2011. He also received several awards including: the Richard B Caspari Award- (Best International Upper Extremity Paper) ISAKOS in 2005, Albert Trillat Young Investigator Award and Scientific Award for Best Scientific Paper ISAKOS in 2009, and the American Academy of Orthopaedic Surgeons Distinguished Volunteer Service Award in 2014. He has been recognized as a America's Top Orthopaedists Consumers' Research Council of America in 2007 and 2008, Outstanding Shoulder Surgeons and Specialists, Becker's Orthopedic & Spine Review in 2011, Best Doctor's in America® in 2014, Best Doctor *Hartford Magazine* from 2008 to 2015, a Castle Connolly Top Doctor from 2012 to 2015.

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