

Alternative  
Bearing  
Surfaces in

# TOTAL JOINT REPLACEMENT

Joshua J. Jacobs  
and Thomas L. Craig  
editors



STP 1346

# Alternative Bearing Surfaces In Total Joint Replacement

**Samo Fokter**



## **Alternative Bearing Surfaces In Total Joint Replacement:**

**Alternative Bearing Surfaces in Total Joint Replacement** Joshua J. Jacobs, Thomas L. Craig, 1998 Contains 18 papers presented at the Symposium on Alternative Bearing Surfaces in Total Joint Replacement held in San Diego California in November 1997 Focus is on development and utilization of alternative bearing surfaces in orthopedics and prosthetics to mitigate the effects of particulate pol Hip Replacement Raj K. Sinha, 2002-07-09 Hip Replacement offers useful strategies to choose the appropriate biomaterials and implant structure avoid complications in hip replacement surgery analyze the bone biomaterial interface perform difficult hip reconstructions track in vivo performance of hip prosthetics inhibit implant loosening and the formation of wear debris classify acetabular defects for surgical revisions Providing nearly 200 figures pictures and micrographs to clarify surgical procedures Hip Replacement is a timely and state of the art guide for orthopaedic and hip replacement surgeons geriatricians biomedical biomaterials and chemical engineers and bioengineers physical materials biological and polymer scientists and upper level undergraduate and graduate students in these disciplines Bioceramics and Alternative Bearings in Joint Arthroplasty James A. D'Antonio, Martin Dietrich, 2006-03-10 Dear Colleague and Participant in Bioceramics and Alternative Bearings In Joint Arthroplasty 10 International BIOLOX Symposium We are once again very proud that we are able to present to you the proceedings of the Symposium as part of your registration materials This group accomplishment has been made possible by the superb cooperation received from the speakers in sending us their manuscripts on a timely basis as well as by the supporting staff at both CeramTec and at the Publishing House in executing all of the details needed We specially extend our most heartfelt thanks to the Scientific Committee for their assistance in evaluating and selecting the submissions as well as developing the Symposium program We are more convinced than ever that the proceedings of this Symposium are a continuation of CeramTec's tradition of providing all members of the orthopedic surgical community with a valuable addition to your reference libraries We hope that this book will present you with the latest and most up to date source of scientific and clinical information regarding the use of ceramics and other alternative bearings in joint replacement surgery **Bioceramics and Alternative Bearings in Joint Arthroplasty** Jun-Dong Chang, Karl Billau, 2007-10-08 th Dear Colleague and Participant of the 12 International BIOLOX Symposium It is an honor for CeramTec to have the BIOLOX Symposium in Asia The selection of Seoul Korea as the site was a difficult one due to the fact that there are many wonderful location options in this dynamic and fast growing region of the world The selection was made easier by the outstanding support of our Symposium Chairman Prof Chang as well as the excellent airline service and meeting facilities present in Seoul We hope that conducting the Symposium in this region will serve as a foundation for the increased recognition of the potential patient benefits to be derived from the use of ceramics and other alternative bearing technologies in Korea China India Japan and the rest of the countries of the region We are convinced that the high quality of the program organized by the scientific committee the prestigious faculty assembled and

your contributions as participants will serve as a catalyst in order to make this Symposium a very enlightening and worthwhile personal experience for all In order to enhance the value of the experience we are pleased to include this proceedings book as an integral part of your registration materials We hope that this written more complete version of the scientific program will allow you to carry home a more concise view of the Symposium presentations

**Core Knowledge in Orthopaedics: Adult Reconstruction and Arthroplasty** Jonathan Garino, Pedro K. Beredjiklian, 2007-07-10 This volume in the Core Knowledge in Orthopaedics Series equips you with the key concepts and clinical skills needed to excel in the subspecialty of adult reconstruction and arthroplasty Inside you ll find concise clinically focused coverage of the surgical techniques you need to know to obtain optimal patient management outcomes along with relevant anatomy biomechanics limb salvage techniques imaging arthroscopy and more It s a perfect resource for training board certification or recertification review or everyday clinical reference Apply the guidance in a logical fashion with coverage that progresses from describing commonly seen clinical problems to reviewing less frequently encountered conditions Follow the most appropriate surgical management approaches Assimilate the information easily through bulleted text crisp artwork clinical charts tables algorithms and annotated key references

**Biomechanics and Biomaterials in Orthopedics** Dominique G. Poitout, 2016-06-15 With the constant evolution of implant technology and improvement in the production of allograft and bone substitutes the armamentarium of the orthopaedic surgeon has significantly expanded In particular the recent involvement of nanotechnologies opens up the possibilities of new approaches in the interactive interfaces of implants With many important developments occurring since the first edition of this well received book this updated resource informs orthopaedic practitioners on a wide range of biomechanical advances in one complete reference guide Biomechanics and Biomaterials in Orthopedics 2nd edition compiles the most prominent work in the discipline to offer newly qualified orthopedic surgeons a summary of the fundamental skills that they will need to apply in their day to day work while also updating the knowledge of experienced surgeons This book covers both basic concepts concerning biomaterials and biomechanics as well as their clinical application and the experience from everyday practical use This book will be of great value to specialists in orthopedics and traumatology while also providing an important basis for graduate and postgraduate learning

**UHMWPE Biomaterials Handbook** Steven M. Kurtz, 2009-04-27 UHMWPE Biomaterials Handbook describes the science development properties and application of of ultra high molecular weight polyethylene UHMWPE used in artificial joints This material is currently used in 1 4 million patients around the world every year for use in the hip knee upper extremities and spine Since the publication of the 1st edition there have been major advances in the development and clinical adoption of highly crosslinked UHMWPE for hip and knee replacement There has also been a major international effort to introduce Vitamin E stabilized UHMWPE for patients The accumulated knowledge on these two classes of materials are a key feature of the 2nd edition along with an additional 19 additional chapters providing coverage of the key

engineering aspects biomechanical and materials science and clinical biological performance of UHMWPE providing a more complete reference for industrial and academic materials specialists and for surgeons and clinicians who require an understanding of the biomaterials properties of UHMWPE to work successfully on patient applications The UHMWPE Handbook is the comprehensive reference for professionals researchers and clinicians working with biomaterials technologies for joint replacement New to this edition 19 new chapters keep readers up to date with this fast moving topic including a new section on UHMWPE biomaterials highly crosslinked UHMWPE for hip and knee replacement Vitamin E stabilized UHMWPE for patients clinical performance tribology an biologic interaction of UHMWPE State of the art coverage of UHMWPE technology orthopedic applications biomaterial characterisation and engineering aspects from recognised leaders in the field

**World Clinics: Orthopedics: Current Controversies in Joint Replacement** Matthew S.

Austin, Gregg R. Klein, 2014-09-30 This book is the first volume in the World Clinics Orthopedics series providing orthopaedic surgeons with the most recent advances and controversies in joint replacement Presented as a series of articles each chapter provides both basic and advanced insights into hip and knee replacement surgeries Advances in total joint arthroplasty are discussed in depth with separate chapters dedicated to European and Asian perspectives Each article is followed by a comment from the editors highlighting the key points of the chapter New techniques are also covered including advances in robotic technology in the operating theatre Edited by internationally recognised experts from the Rothman Institute Philadelphia and Hackensack University Medical Centre New Jersey this useful guide includes numerous images figures and tables as well as extensive referencing throughout Key points Provides orthopaedic surgeons with latest advances and controversies in joint replacement Covers new techniques including advances in robotic technology Numerous images and illustrations and extensive referencing Internationally recognised editor and author team

**Recent Advances in**

**Arthroplasty** Samo Fokter, 2012-01-27 The purpose of this book was to offer an overview of recent insights into the current state of arthroplasty The tremendous long term success of Sir Charnley s total hip arthroplasty has encouraged many researchers to treat pain improve function and create solutions for higher quality of life Indeed and as described in a special chapter of this book arthroplasty is an emerging field in the joints of upper extremity and spine However there are inborn complications in any foreign design brought to the human body First in the chapter on infections we endeavor to provide a comprehensive up to date analysis and description of the management of this difficult problem Second the immune system is faced with a strange material coming in huge amounts of micro particles from the tribology code Therefore great attention to the problem of aseptic loosening has been addressed in special chapters on loosening and on materials currently available for arthroplasty

**Surgical Treatment of Hip Arthritis: Reconstruction, Replacement, and Revision E-Book** William Hozack, Javad Parvizi, Benjamin Bender, 2009-10-12 Surgical Treatment of Hip Arthritis Reconstruction Replacement and Revision by William J Hozack MD is a state of the art reference that addresses the challenging issues you face in this rapidly

growing segment of orthopaedic practice Inside you ll find top surgical management strategies for all types of hip arthroplasty presented by leaders from around the world along with discussions of possible complications risks and benefits to specific patient populations and more Best of all this resource also offers access to a companion website where you will find the full text of the book completely searchable Includes online access to the full text at expertconsult com for convenient anytime anywhere reference Presents state of the art surgical management strategies for hip arthritis from reconstruction to replacement to revision by experts worldwide for comprehensive guidance in one convenient resource Offers current information on computer assisted navigation techniques and minimally invasive techniques to equip you with the latest surgical options Provides extensive discussions of the management of a full range of complications to help you overcome the challenges you ll face Addresses the rationale for and management of revision surgery given specific patient problems and intraoperative issues enabling you to make the best informed surgical decisions Presents more than 600 illustrations including original line art radiologic images and full color intraoperative photos that show you exactly what to look for and how to proceed

*Total Hip Arthroplasty* Karl Knahr,2012-03-13 During the 2011 EFORT Congress in Copenhagen many interesting topics relating to tribology in total hip arthroplasty were discussed during a special day devoted entirely to the subject EFORT decided that given the wide interest in these discussions publication of the presentations would be warmly welcomed by all fellow professionals who were unable to attend This book is the result It provides detailed information on currently used articulating materials and their wear performance Clinical outcomes are discussed and important new frontiers are carefully considered The book will be of interest both to novices who want to learn more about the field and to experienced orthopaedic surgeons wishing to keep abreast of the latest developments

### **Bioceramics in Joint**

**Arthroplasty** Jonathan P. Garino,Gerd Willmann,2002 **Bioceramics in Joint Arthroplasty** Jean-Yves Lazennec,Martin Dietrich,2012-12-06 The latest scientific and clinical information regarding the use of ceramics in orthopaedic surgery CeramTec has had a long and close relationship with the French orthopaedic community and this community has been an incontestable pioneer in the use of ceramic in this field of orthopaedics That is why the symposium takes place in Paris under the presidency of Professor J Y Lazennec H pital Piti Salp tri re

### **Navigation and Robotics in Total Joint and Spine**

**Surgery** James B. Stiehl,Werner H. Konermann,Rolf G. Haaker,2012-12-06 This book reviews the recent international experience with the applications of computer assisted orthopaedic surgery in clinical practice Recent decades of the human condition have witnessed the dramatic evolution of technology and the application to everyday existence The ability to use such innovation in surgical practice is now easily within our grasp Though clinical experience is short term as will be demonstrated the problems are finite and limited only by the need for refinement We can now clearly state that current surgical practice will be revolutionized by these new methodologies This edition is all encompassing for musculoskeletal surgery including the spine trauma sports and reconstructive surgery Because of its simplicity computer navigation will be

an early tool in such areas as total joint replacement anterior cruciate ligament reconstruction and placement of pedicle screws in complex spinal surgery New techniques in Minimally Invasive Surgery will require the precision and digital surgical exposure offered by the computer However we anticipate in a few years that robotics with computer activated technology will rise to an important role for the practicing surgeon Surgeons who are comfortable with technology and yearn for better solutions with their techniques will benefit from the knowledge of this experience Americans at the AAOS 2003 annual meeting in New Orleans have now joined the wave of enthusiasm for computer assisted orthopaedic surgery CAOS as well as the exciting new vistas of Minimally Invasive Surgery     The Shoulder Charles A. Rockwood,2009-01-01 DVD

**Surgery of the Hip E-Book** Daniel J. Berry,Jay Lieberman,2012-12-07 Surgery of the Hip is your definitive comprehensive reference for hip surgery offering coverage of state of the art procedures for both adults and children Modelled after Insall Scott Surgery of the Knee it presents detailed guidance on the latest approaches and techniques so you can offer your patients both young and old the best possible outcomes Consult this title on your favorite e reader conduct rapid searches and adjust font sizes for optimal readability Compatible with Kindle nook and other popular devices Master the latest methods such as the use of fixation devices for proximal femoral fractures hip preservation surgery and problems with metal on metal bearing implants Make optimal use of the latest imaging techniques surgical procedures equipment and implants available Navigate your toughest clinical challenges with vital information on total hip arthroplasty pediatric hip surgery trauma and hip tumor surgery Browse the complete contents online view videos of select procedures and download all the images at [www.expertconsult.com](http://www.expertconsult.com)     *Volume 44, Issue 4, An Issue of Orthopedic Clinics* Asif M. Ilyas,2013-10-16 Each issue of Orthopedic Clinics offers clinical review articles on the most cutting edge technologies techniques and more in the field Major topic areas include adult reconstruction upper extremity pediatrics trauma oncology hand foot and ankle and sports medicine     **Arthritis and Arthroplasty: The Hip** Thomas E. Brown,QuanJun Cui,William M. Mihalko,Khaled Saleh,2009-06-18 The Hip a volume in the new Arthritis and Arthroplasty series offers expert guidance on everything from patient selection and pre operative planning to surgical approaches and techniques Clear evidence based coverage details which technology and methodology used for total Hip arthroplasty THA reconstruction or revision is best for each patient Access discussions of debates on minimally invasive surgery component material and bearing options cemented vs uncemented fixation of the components and more Explore alternatives to THA in younger arthritic patients and view expertly narrated video demonstrations of surgical techniques In addition to providing practical pragmatic advice in a concise readable format this Expert Consult title offers the full text of the book as well as links to PubMed and periodic content updates online at [expertconsult.com](http://expertconsult.com) Access the full text of the book as well as links to PubMed and periodic content updates on outcome data component materials and surgical techniques online at [expertconsult.com](http://expertconsult.com) Features procedural videos narrated by experts on the included DVD so you can see how to perform particular techniques Covers periacetabular

osteotomy neurovascular injury and other hot topics to keep you abreast of the latest developments in the specialty Provides evidence based clinically focused guidance on patient selection pre operative planning surgical approach and techniques bearing surfaces and component materials disease specific options the management and avoidance of complications salvage and revision THA strategies and more Discusses variations in technique including cemented vs cementless fixation resurfacing or more radical removal of bone and minimally invasive technique where the exposure is more limited so you can choose which is most effective for each patient Explores alternatives to THA in younger arthritic patients such as arthroscopy arthrodesis osteotomy and resurfacing Includes a review page in every chapter for quick reference to pearls and pitfalls for each topic Presents photographs and interpretive drawings of surgical techniques in full color to bring out intraoperative details as they appear in the operating room

**The UHMWPE Handbook** Steven M. Kurtz, 2004-06-26 Recently the orthopedic industry developed new processing techniques radiation crosslinking which are expected to dramatically reduce wear and improve the longevity of hip implants beyond 10 years This book describes the history and properties of ultra high molecular weight polyethylene UHMWPE used in artificial joints by describing its properties and reviewing the latest clinical results The most up to date information on the properties of UHMWPE Endorsed by Ticona the world's leading manufacturer of UHMWPE for medical use An enormous installed base of over 1.4 million procedures each year UHMWPE has been used by orthopedists for over 40 years yet its properties and performance in situ are still not well understood

PEEK Biomaterials Handbook Steven M. Kurtz, 2011-10-28 PEEK biomaterials are currently used in thousands of spinal fusion patients around the world every year Durability biocompatibility and excellent resistance to aggressive sterilization procedures make PEEK a polymer of choice replacing metal in orthopedic implants from spinal implants and hip replacements to finger joints and dental implants This Handbook brings together experts in many different facets related to PEEK clinical performance as well as in the areas of materials science tribology and biology to provide a complete reference for specialists in the field of plastics biomaterials medical device design and surgical applications Steven Kurtz author of the well respected UHMWPE Biomaterials Handbook and Director of the Implant Research Center at Drexel University has developed a one stop reference covering the processing and blending of PEEK its properties and biotribology and the expanding range of medical implants using PEEK spinal implants hip and knee replacement etc Covering materials science tribology and applications Provides a complete reference for specialists in the field of plastics biomaterials biomedical engineering and medical device design and surgical applications



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