



2020 ANNUAL MEETING

FEBRUARY 8–11, 2020
PHOENIX, ARIZONA

POSTER BOOK



ORS SUPPORTERS

2020 ANNUAL MEETING

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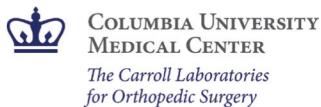


ON/ORS Education Grants

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New Investigator Recognition Awards (NIRA) Supporters



2020 POSTER SESSIONS

SATURDAY – TUESDAY (NORTH HALL A – C)

ORS WILL HAVE TWO POSTER SESSIONS:

Poster Session 1 (PS1) – Posters will be displayed Saturday and Sunday, authors will present posters both days, EVEN-numbered posters on Saturday, ODD-numbered posters on Sunday.

Poster Session 2 (PS2) – Posters will be displayed Monday and Tuesday, authors will present posters both days, EVEN-numbered posters on Monday, ODD-numbered posters on Tuesday.

POSTER SESSION 1

Saturday, February 8

10:15 AM – 11:15 AM **Poster Viewing**

Authors of EVEN-numbered posters

5:30 PM – 7:00 PM **Poster Session 1 Reception**

Sunday, February 9

10:15 AM – 11:15 AM **Poster Viewing**

Authors of ODD-numbered posters

3:00 PM – 4:00 PM **Poster Viewing**

POSTER SESSION 2

Monday, February 10

10:15 AM – 11:15 AM **Poster Viewing**

Authors of EVEN-numbered posters

5:30 PM – 7:00 PM **Poster Session 2 Reception**

Tuesday, February 11

9:00 AM – 10:00 AM **Poster Viewing**

Authors of ODD-numbered posters

12:15 PM – 1:45 PM **Poster Viewing**

POSTER CATEGORIES	POSTER SESSION 1 #'s	POSTER SESSION 2 #'s
Biomaterials	525–566	1409–1450
Board of Specialty Society (BOS) Best Posters	BOS1–BOS4	BOS1–BOS4
Bone	790–921	1670–1799
Business Innovation Competition (BIC)	BIC1–BIC9	BIC1–BIC9
Cartilage and Synovium	567–679	1451–1562
Clinical Studies	1357–1408	2240–2290
Foot and Ankle	1263–1285	2145–2167
Guest Nation—Australia	GN1–GN2	GN1–GN2
Hand and Wrist	1245–1262	2127–2144
Hip	1121–1191	2002–2074
Imaging	1286–1303	2168–2185
Infection	1304–1331	2186–2213
International Combined Orthopaedic Research Society (ICORS) Best Posters	ICORS1–ICORS9	ICORS1–ICORS9
Intervertebral Disc	975–1014	1855–1895
Knee	1015–1120	1896–2001
Late Breaking Posters	2301–2404	2405–2507
Meniscus	680–696	1563–1578
Moderated Posters	365–524	365–524
NIRA Finalists	136–176	136–176
Shoulder and Elbow	1192–1244	2075–2126
Skeletal Muscle	765–789	1645–1669
Spine	922–974	1800–1854
Tendon and Ligament	697–764	1579–1644
Tumors	1332–1356	2214–2239

GUEST NATION Best Posters



Guest Nation—Australia

Australia will have two posters displayed during the meeting. Poster numbers are GN1 and GN2.

- GN1** Knee Osteoarthritis: Presence Of Bone Marrow Lesions In Subchondral Bone Indicates Increased Number And Thickness Of Plate Like Trabeculae
Dzenita Muratovic, Yizhong Hu, Kevin Cheuk, Yin Lai, Wilson Ho Wu Cheung, X. Edward Guo, David Findlay, Yea Rin, Lee, Julia Kuliwaba
- GN2** A Novel Dynamic Cadaveric Wrist Simulator For 3-Dimensional Carpal Bone Motion Measurement Using Biplane X-Ray Fluoroscopy
Xin Zhang, Wei Wang, Stephen Tham, Eugene Ek, David McCombe, David Ackland

BOARD OF SPECIALITY SOCIETY (BOS)

BEST POSTERS

- BOS 1** **American Association of Hip and Knee Surgeons (AAHKS)**
The Effect of Bladder Catheterization On Ambulation and Venous Thromboembolism Following Total Knee Arthroplasty: A Prospective Institutional Analysis
Peter Gold, Luke Garbarino, Hiba Anis, Nipun Sodhi, Max Willinger, Jonathan Danoff, Sreevathsa Boraiah, Vijay Rasquinh, Michael Mont
- BOS 2** **American Orthopaedic Foot and Ankle Society (AOFAS)**
Fatigue Strength Of Highly Crosslinked Polyethylene In Total Ankle Arthroplasty
Oliver N. Schipper, Mehul A. Dharja, Justin S. Hertzler, Jeffrey E. Bischoff
- BOS 3** **Orthopaedic Trauma Association (OTA)**
Is The Bioactivity Of Induced Membranes Time-Dependent?
Jan Gessmann, Thomas Rosteius, Kavitha Sivalingam, Dominik Seybold, Elvira Peter, Thomas A. Schildhauer, Manfred Koeller
- BOS 4** **Pediatric Orthopaedic Society of North America (POSNA)**
Coronal Remodeling Potential Of Pediatric Distal Radius Fractures
Kyle Lynch, Michael Wesolowski, Teresa Cappello



BUSINESS INNOVATION COMPETITION POSTERS

- BIC1 ALGOA PROGRESS
- BIC2 Argyle Scientific
- BIC3 Bone's Technology Ltd
- BIC4 DeBogy Molecular Inc
- BIC5 Interstellar Therapeutics, LLC
- BIC6 Iris Histology Imaging
- BIC7 NanoSUS
- BIC8 REX Ortho Pty Ltd
- BIC9 Zefas

INTERNATIONAL COMBINED ORTHOPAEDIC RESEARCH SOCIETIES (ICORS) BEST POSTERS

- ICORS 1 **AO Foundation**
Cloning The Haptotaxis And Durotaxis Genes Responsible For S. Aureus Invasion Of The Osteocytic Lacuno-Canalicular Network During Chronic Osteomyelitis
Elysia A Masters, Alec T Salminen, Karen L de Mesy Bentley, James L McGrath, Steven R Gill, Hani A Awad and Edward M Schwarz
- ICORS 2 **Asia Pacific Orthopedic Research Society**
The Characterisation Of Monoctye Responses To Mediators Released From Periprosthetic Tissues Following Arthroplasty Surgery For Osteoarthritis
Tunku K. Zaman; Krishnamurthy Genasan; Margaret M. Roebuck; Valentina Barrera; Amanda Wood; Jesus Reine; Azhar Mahmood Merican; Murali MR; Azura Mansor; Simon P. Frostick
- ICORS 3 **Australian and New Zealand Orthopedic Research Society**
Virtual Planning and Personalised Cutting Guides for Juvenile Femoral Osteotomies
Martina Barzan, David Bade, Sheanna Maine, Derek Smith, David Lloyd, Christopher Carty

- ICORS 4 **British Orthopaedic Research Society**
TightRight : Augmenting Screwdrivers to Reduce Bone Stripping Rates and Optimise Tightness When Inserting Non-locking Screws
James W. A. Fletcher, Verena Neumann, Juan Silva, Karen Mys, Vasiliki C. Panagiotopoulou, Abigail Burdon, Boyko Gueorguiev, R. Geoff Richards, Michael R. Whitehouse, Ezio Preatoni, Harinderjit S. Gil
- ICORS 5 **The Chinese Orthopaedic Research Society**
Bioreactor Derived Human Fetal Mesenchymal Stem Cell Secretome Promote Diabetic Skin Wound Healing
Bin Wang, Qi Pan, Haixing Wang, Yucong Li, Sien Lin, Yuk-Wai Lee, Gang Li
- ICORS 6 **European Orthopaedic Research Society**
Accuracy and Quality of Educational Videos For Elbow Physical Examination: What Should Our Students Watch?
Elisa Zwerus, Rik J. Molenaars, Michel P.J. van den Bekerom, Bertram The, Prof. Denise Eygenda
- ICORS 7 **International Chinese Musculoskeletal Research Society**
Targeting the Aberrantly Distributed Sclerostin-producing Fibroblasts to Enhance Rotator Cuff Repair
Xiaodan Chen, Jiankun Xu, Yang Liu, Jiali Wang, Dick Ho-Kiu Chow, Nianye Zheng, Hao Yao, Bruma Fu, Patrick Shuhang Yung, Ling Qin
- ICORS 8 **The Japanese Orthopaedic Association**
Tranilast Enhances the Effect of Anticancer Agents in Osteosarcoma
Takayuki Nakashima, Satoshi Nagano, Takao Setoguchi, Hiromi Sasaki, Yoshinobu Saitoh, Shingo Maeda, Setsuro Komiya and Noboru Taniguchi
- ICORS 9 **Korean Orthopaedic Research Society**
Maximum Length of Acetabular Cup Screw Measured Using 3D Model
Woo-Lam Jo, Young-Wook Lim, Soon-Yong Kwon, Yong-Sik Kim

Saturday, February 8—Tuesday, February 11, 2020

NEW INVESTIGATOR RECOGNITION AWARD (NIRA)

NIRA—Spine and Cartilage

The following posters will also be presented in the NIRA presentation session on Sunday, February 9 from 11:15 AM—12:15 PM.

Poster No. 136

Sensory Innervation In Porous Endplates By Netrin-1 From Osteoclasts Mediates Pge2-induced Spinal Pain
Shuangfei Ni; Hongbin Lu; Jianzhong Hu; Xu Cao

Poster No. 137

Evaluation Of Lumbar Spinal Fusion Utilizing Recombinant Human Platelet Derived Growth Factor-b Chain Homodimer Combined With Bovine Collagen/ β -tricalcium Phosphate In An Ovine Model
Benjamin C. Gdomski; Kevin Labus; Christian Puttlitz; Kirk McGilvray; Howard Seim; Brad Nelson; Jeremiah Easley

Poster No. 138

Phlpp1 Regulates Cellularity And Matrix Homeostasis In Intervertebral Disc Degeneration
Changli Zhang; Madeline Smith; George Zhou; Alon Lai; Robert Hoy; Victoria Mroz; Olivia Torre; Damien Laudier; Elizabeth Bradley; Jennifer Westendorf; James Iatridis; Svenja Illien-Junger

Poster No. 139

A Combined Hydrogel And Mesenchymal Stem Cell Therapy Improves Disc Height And Condition In A Goat Model Of Disc Degeneration
Chenghao Zhang; Sarah E. Gullbrand; Thomas P. Schaer; Dawn M. Elliott; George R. Dodge; Robert L. Mauck; Neil R. Malhotra; Lachlan J. Smith

Poster No. 140

Vegf-neutralized Platelet-rich Plasma And Adipose Stem Cells Enhance Articular Cartilage Regeneration In Goat Model
Shinsuke Kihara; Tomoya Iseki; Benjamin Rothrauff; Freddie Fu; Rocky Tuan; Peter Alexander

Poster No. 141

Neural Eglf Like 1, A New Dual-functioning Disease-modifying Osteoarthritis Drug
Chenshuang Li; Pin Ha; Wenlu Jiang; Emily Berthiaume; Hsinchuan Pan; Cymbeline Culiati; Xinli Zhang; Kang Ting; Chia Soo; Zhong Zheng

Poster No. 142

Low Risk, High Impact: 3-D Printed Fracture Models For Resident Education
Danielle M. Cristino; Kayley A. Dear; Elaine C. Schmidt; Michael W. Hast; Samir Mehta

NIRA—Cartilage and Synovium

The following posters will also be presented in the NIRA presentation session on Sunday, February 9 from 11:15 AM—12:15 PM.

Poster No. 143

Adipose-cartilage Crosstalk Is A Critical Effector Of Cartilage Pathology
Kelsey H. Collins; Irina Hutson; Daniel Ferguson; Yun-rak Choi; Luke E. Springer; Ruhang Tang; Eleanor N. Pollitt; Kristin L. Lenz; Christine T.N. Pham; Gretchen A. Meyer; Charles A. Harris; Farshid Guilak

Poster No. 144

Repressing MicroRNA-dependent Retrotransposon Line-1 For Osteoarthritis Treatment
Yun Gao; Zhiyu Huang; Nan Hu; Pengcheng Liu; Jing Ding; Meng Feng; Kun Yang; Qiling Yuan; Xiaqing Jiang; Cherie Charbonneau; Marco De Cecco; Richard Terek; John Froehlich; Joen M. Sedivy; Qian Chen

Poster No. 145

Single-cell RNA Sequencing Reveals A Novel Obesity-associated Myeloid Cell Population In Visceral Fat And The Knee Joint
Natalia S. Harasymowicz; Alireza Savadipour; Chia-Lung Wu; John Bramley; William Buchser; Farshid Guilak

Poster No. 146

Cellular And Molecular Mechanisms Regulating Synovial Joint Cavitation
Minwook Kim; Heejong Kim; Kimberly G. Helbig; Danielle R. Rux; Nancy Pleshko; Benjamin A. Garcia; Eiki Koyama; Maurizio Pacifici

Poster No. 147

Primary Cilia Drive Postnatal Articular Cartilage Morphogenesis Through Proteoglycan Production And Chondrocyte Organization In Mouse Limbs
Danielle Rux; Kimberly Helbig; Biao Han; Minwook Kim; Lin Han; Eiki Koyama; Maurizio Pacifici

Poster No. 148

Periostin-siRNA Nanoparticles Mitigate Post-traumatic Osteoarthritis In Mice Via Canonical Wnt And Nfkb Signaling Pathways
Xin Duan; Lei Cai; Christine TN Pham; Hua Pan; Robert H. Brophy; Samuel A. Wickline; Muhammad Farooq Rai

Poster No. 149

Platelet Derived Growth Factor Receptor-beta (pdgfrb) Lineage Tracing Highlights Pericyte To Myofibroblast Transdifferentiation During Post-traumatic Osteoarthritis.
Takashi Sono; Ching-Yun Hsu; Stefano Negri; Sarah Miller; Yiyun Wang; Jiajia Xu; Carolyn A. Meyers; Bruno Peault; Aaron James

Poster No. 150

Robust Characterization Of Non-invasive PTOA Mouse Model
Fazal Ur Rehman Bhatti; Do-Gyoon Kim; Karen Hasty; Hongsik Cho

NIRA – Bone and Hip

The following posters will also be presented in the NIRA presentation session on Sunday, February 9 from 11:15 AM–12:15 PM.

Poster No. 151

Acute Fisetin Treatment Attenuates Age-associated Bone Density Loss In The Zmpste²⁴ Progeria Mouse Model

William S. Hambright; Yohei Kawakami; Xiaodong Mu; Xueqin Gao; Aiping Lu; James Kirkland; Johnny Huard

Poster No. 152

Identification Of A Novel Adipose Lineage Cell Population That Regulates Bone Marrow Environment

Leilei Zhong; Lutian Yao; Robert J. Tower; Yulong Wei; Luqiang Wang; Wei Yu; Yeja Zhang; Yanqing Gong; Fanxin Long; Patrick Seale; Chider Chen; Jaimo Ahn; Ling Qin

Poster No. 153

Delineating The Effects Of Pregnancy And Lactation On Rat Maternal Bone Responses To Future Estrogen Deficiency

Rebecca Chung; Yihan Li; Chantal M.J. de Bakker; Carlos Osuna; Justin Leggin; Zachary Davis; Liyun Wang; X. Sherry Liu

Poster No. 154

Elderly Patients With Distal Radius Fractures Exhibit Delayed Fracture Healing: An In Vivo Hr-pqct Micro-fea Study

Caitlyn J. Collins; Penny R. Atkins; Nicholas Ohs; Lukas Horling; Kerstin Stock; Patrik Christen; Michael Blauth; Ralph Müller

Poster No. 155

3D Bioprinting Spatio-temporally Defined Patterns Of Growth Factors To Tightly Control Tissue Regeneration

Fiona E. Freeman; Pierluca Pitacco; Jessica Nulty; David C. Browe; Jung-Youn Shin; Eben Alsberg; Daniel J. Kelly

Poster No. 156

Dynamics Of Modeling- And Remodeling-Based Bone Formation In Response To Intermittent Parathyroid Hormone (PTH) Treatment And Discontinuation

Wenzheng Wang; Wei-Ju Tseng; Hongbo Zhao; Tala Azar; Nathaniel Dymant; X. Sherry Liu

Poster No. 157

Altered Capital Femoral Physis Morphology Is Associated With Increased Risk Of Cam-type Femoroacetabular Impingement In Children And Adolescents

Shayan Hosseinzadeh; Alireza Emami; Gabriela Portilla; Eduardo N. Novais; Young-Jo Kim; Ata M. Kiapour

Poster No. 158

A Finite Element Analysis To Investigate The Biomechanical Effect Of Ischiofemoral Impingement, Femoroacetabular Impingement, And Abnormal Femoral Torsion On The Lumbar Spine

Anthony N. Khoury; Tejas Mhetre; Cheng-Jen Chuong; Hal D. Martin

Poster No. 159

Malalignment Of “Blade-type” Femoral Stems Leads To Dramatic Increases In Cortical Stresses And Interface Micromotion

Eunjoo Hwang; Houston L. Braly; Sabir K. Ismaily; Philip C. Noble

NIRA – Lower Extremity

The following posters will also be presented in the NIRA presentation session on Sunday, February 9 from 11:15 AM–12:15 PM.

Poster No. 160

Retrieval Analysis Of Total Ankle Arthroplasty Implants And Periprosthetic Tissue Through A Multicenter Collection

Erin A. Baker; Zachary M. Vaupel; Corinn K. Gehrke; Daniel M. Briggs; Kevin C. Baker; J. Christopher Coetzee; Mark S. Myerson; John G. Anderson; Stephen P. Biebelhausen; Paul T. Fortin

Poster No. 161

Objective Mechanical Measures Predict Post-traumatic OA Risk After Intra-articular Fracture Of The Tibial Plafond

Kevin N. Dibbern; Michael C. Willey; J. Lawrence Marsh; Donald D. Anderson

Poster No. 162

Biomechanical Evaluation Of Extensor Tendon Transfers For Treatment Of Foot Drop

Max Michalski; Trevor J. Nelson; Tonya An; Glenn Pfeffer; Melodie F. Metzger

Poster No. 163

Exploiting Biological Priors To Enhance Genome-Wide Association Study In A Dog Model Of Anterior Cruciate Ligament Rupture

Lauren A. Baker; Rachel McNally; Mark Berres; Emily E. Binversie; Susannah J. Sample; Peter Muir

Poster No. 164

Development Of Anti-CD163 Therapy For Staphylococcus Aureus Sepsis Following Surgical Site Infection

Yugo Morita; Masahiro Ishikawa; Noriaki Yokogawa; Kohei Nishitani; Karen L. de Mesy Bentley; Hiromu Ito; Chao Xie; John L. Daiss; Stephen L. Kates; Edward M. Schwarz

Poster No. 165

Humanized Mice Exhibit Increased Susceptibility To Staphylococcus Aureus Osteomyelitis Induced Sepsis

Gowrishankar Muthukrishnan; Alexandra Wallimann; Maria Hildebrand; Aron Keshishian; Caroline Constant; Marc Antoine Burch; John Daiss; Stephan Zeiter; R. Geoff Richards; Edward Schwarz; T. Fintan Moriarty

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Poster No. 166

Early Removal Of The Infrapatellar Fat Pad Beneficially Alters The Pathogenesis Of Primary Osteoarthritis In The Hartley Guinea Pig

Maryam F. Afzali; Lauren B. Radakovich; Zachary C. Pixler; Margaret A. Campbell; Joseph L. Sanford; Angela J. Marlof; Tammy H. Donahue; Kelly S. Santangelo

Poster No. 167

Identification Of Gli1 As A Progenitor Cell Marker For Meniscus Injury Repair

Yulong Wei; Hao Sun; Lutian Yao; Leilei Zhong; Wei Yu; Su Chin Heo; Lin Han; Fanxin Long; Robert L. Mauck; Jaimo Ahn; Ling Qin

Poster No. 168

Exercise Enhances Skeletal Muscle Regeneration By Promoting Senescence In Fibro-adipogenic Progenitors

Yuki Saito; Takashi Matsumura; Mineko Fujimiya; Takako S. Chikenji

NIRA—Biomaterials, Tendon and Ligament, and Tumors

The following posters will also be presented in the NIRA presentation session on Sunday, February 9 from 11:15 AM—12:15 PM.

Poster No. 169

A Bone Bandage For Treatment Of Fracture Non-unions

Deepak Bushan Raina; Alexandra Glencross; Nadia Chaher; Yang Liu; Lars Lidgren; Hanna Isaksson; Magnus Tägil

Poster No. 170

Development Of siRNA-Activated Scaffold Delivery System To Ameliorate Inflammatory Responses During Regeneration Of Osteoarthritic Cartilage

Tom Hodgkinson; Domhnall Kelly; James E. Dixon; Kevin M. Shakesheff; Fergal J. O'Brien

Poster No. 171

Micro-geometry In Metal Scaffold Affect Angiogenesis And Osteogenesis

Chengyu Yang; Yixing He; Yang Liu; Chao Liu

Poster No. 172

Investigation Of Chitosan-based Bone Graft Substitutes For The Treatment Of Femoral Critical-size Bone Defects In A Rat Model

Bruno Zwingenberger; Corina Vater; Julia Bolte; Michael Gelinsky; Ronny Brünler; Dilbar Aibibu; Stefan Zwingenberger

Poster No. 173

Rcn3 Is Involved In Postnatal Tendon Maturation By Regulating Collagen Fibrillogenesis

Na Rae Park; Snehal Shetye; Douglas R. Keene; Sara Tufa; David M. Hudson; Marilyn Archer; Kyu Sang Joeng

Poster No. 174

Aging And Degeneration Alter Chromatin Organization And Mechano-responsivity In Human Tenocytes

Su-Jin Heo; Shreyasi Thakur; Boao Xia; Rowena Mcbeath; Melike Lakadamyali; Robert Mauck

Poster No. 175

Flow Cytometry And Single-cell RNA Sequencing Identify Novel Myeloid Cell Populations In Bone-to-tendon Interface Tissue After ACL Reconstruction Surgery In Mice

Takayuki Fujii; Susumu Wada; Camila Carballo; Yake Liu; Daoyun Chen; Xiang-Hua Deng; Kyung-Hyun Park-Min; Scott A. Rodeo; Lionel B. Ivashkiv

Poster No. 176

The “Boost Effect” From An Intramedullary Rod For The Treatment Of Metastatic Bone Disease

Tae Won B. Kim; Sandra A. Miskiel; Kiet Huynh; Ahmad Amoush; John Gaughan; Gregory J. Kubicek

MODERATED POSTERS

These posters will be displayed Saturday – Tuesday of the meeting.

Biomaterials

Poster No. 365

Evaluation Of Ex Vivo Herniation Risk Of A Novel Two-part Strategy For Annulus Fibrosus Repair

Tyler J. DiStefano; Jennifer O. Shmukler; Warren W. Hom; Steven B. Nicoll; James C. Iatridis

Poster No. 366

Macrophage Responses To Stable And Non-stable CoCrMo Wear And Corrosion Debris Generated In-situ

Lauryn Samelko; Kathrin Ebinger; Simona Radice; Robin Pourzal; Markus A. Wimmer; Nadim J. Hallab

Poster No. 367

Guided Osteochondral Differentiation Of Stem Cells On A Multilayered Scaffold

Elisabeth Amann; Amisel Amirall; Albina R. Franco; Isabel B. Leonor; Rui L. Reis; Martijn van Griensven; Elizabeth Rosado Balmayor

Poster No. 368

3D Printed Synthetic and Decellularized Matrix Scaffolds for Treatment of Osteochondral Injury In Vitro and In Vivo

Stacey M. Gruber; Sumit Murab; Karl Mueller; Paulomi Ghosh; Patrick Whitlock; Chia-Ying James Lin

Poster No. 369

Controlling The Friction Coefficient Of Porous Structures Through 3D Printing Parameters

Ilona Hoffmann; Keita Uetsuki; Hiroyuki Takahashi

Poster No. 370

N-4 Chitosan: A Non-eluting, Broad Spectrum Antimicrobial Coating For Orthopedic Implants

Randy Clevenger; CJ Kim; Kristin Blacklock; Gordon D. Donald

Poster No. 371

Towards Development Of Engineered Discs With Gradients: Mechanical Properties Of Agarose-alginate-collagen Gels

Keerthana Elango; Gabriel R. Lopez-Marcial; Grace D. O'Connell

Poster No. 372

Do Taper Geometry And Head Size Affect Taper Fretting Corrosion In Total Hip Arthroplasty? A Retrieval Analysis Of Ceramic-on-polyethylene And Metal-on-polyethylene Explants

Corinn Gehrke; Zein S. El-Zein; J. Sawyer Croley; Murphy A. Mallow; James J. Verner; Michael A. Flierl; Erin A. Baker

Cartilage and Synovium

Poster No. 373

Cam-type Femoroacetabular Impingement Tissue Demonstrates Decreased Bioactivity And Extracellular Matrix Synthesis Compared To Normal Or Arthritic Cartilage

Haixiang Liang; Eric V. Neufeld; Benjamin C. Schaffler; Chelsea Matzko; Michael Mashura; Srino Bharam; Daniel A. Grande

Poster No. 374

Sex Differences In Chondrocyte ROS Production Is Independent Of Integrin $\alpha 1 \beta 1$

Alicia Black; Sienna Cole; Ambra Pozzi; Andrea Clark

Poster No. 375

Metabolic Responses Of Normal, Injured, And Osteoarthritic Chondrocytes In Primary Cell Culture

Nicole T. Greco; Aaron M. Stoker; Spencer E. DeLucia; Anna N. Sullentrup; Eli L. Pratte; James P. Stannard; James A. Keeney; James L. Cook

Poster No. 376

High-throughput Drug Screening For Osteoarthritis

Thomas J. Kean; James E. Dennis

Poster No. 377

Progression Of Osteoarthritis Accompanying With The Increased Chondrocyte Senescence: Role Of Mechanical Loading

Ning Wang; Rocky Tuan; Hang Lin

Poster No. 378

Untargeted Metabolomic Analysis Of Ampkalpha1 Ko Mouse Knees Reveals Elevated Pathways In Female Mutants

Soumilee Chaudhuri; Isaak Thornton; Liang-Yu Chen; Ru Liu-Bryan; Ron June

Poster No. 379

Matrix Mediated Cartilage Regeneration In A Rabbit Articular Defect Model

Zhihua Lu; Sheng Zhou; Justin Vaida; Gongming Gao; Amanda Stewart; Joshua Parenti; Ming Pei

Poster No. 380

Adipose-derived Stem Cells Enhance Chondrogenesis And Cartilaginous Matrix Synthesis Of Articular Chondrocytes Is Mediated By Extracellular Vesicles

Shun Cheng Wu; Jhen-Wei Chen; Che-Wei Wu; Chung-Hwan Chen; Je-Ken Chang; Mei-Ling Ho

Poster No. 381

Mechanically-Activated Microcapsules Deliver Chondroprotective Agents And Prevent Degeneration In An Inflammatory Microenvironment

Ana P. Peredo; Yun Kee Jo; Daeyeon Lee; George R. Dodge; Robert L. Mauck

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Poster No. 382

Carbon Dot-guided Delivery Of Therapeutic (sox9, TGFbeta) Raav Vectors To Enhance The Chondrogenic Differentiation Potential Of Human Bone Marrow-derived Mesenchymal Stem Cells
Jagadeesh K. Venkatesan; Gertrud Schmitt; Françoise Pons; Luc Lebeau; Magali Cucchiari

Poster No. 383

Rapid Nontoxic Photochemical Collagen Crosslinking Improves Cartilage Wear
Diane R. Wagner; Amin Joukar; Hessam Noori-Dokht; Sonali Karnik; M. Jayed Hossain; Stephen B. Trippel

Poster No. 384

Magneto-Patterned Mesenchymal Stem Cell Laden Hydrogels Recapitulate Cartilaginous Matrix Gradients
Hannah M. Zlotnick; Andy T. Clark; Sarah E. Gullbrand; James L. Carey; Xuemei M. Cheng; Robert L. Mauck

Poster No. 385

Interleukin-1a Decreases Coefficient Of Friction Of Synovium Ex Vivo
Lance A. Murphy; Lianna R. Gangi; Robert M. Stefani; Hagar M. Kenawy; Andy J. Lee; Gerard A. Ateshian; Roshan P. Shah; Clark T. Hung

Poster No. 386

Characterization Of Collagen Content In Chondrocyte Environment Of Healthy And Osteoarthritic Human Tibial Cartilage
Awuniji Linus; Mohammadhossein Ebrahimi; Petri Tanska; Mikko A. Finnilä; Arto P. Koistinen; Antti Joukainen; Heikki Kröger; Saarakkala Simo; Mikael J. Turunen; Rami K. Korhonen

Poster No. 387

Microscale Compositional Mapping Predicts Local Strains Across Interface Of Cartilage Repair From An Eight Month Equine Model
Rebecca M. Irwin; Alexander J. Boys; Tianyu Gao; Itai Cohen; Lara A. Estroff; Lawrence J. Bonassar

Poster No. 388

Proteoglycan-4 Inhibits Fibroblast To Myofibroblast Transition And Migration In Response To TGF-beta In A Fibroblast And Macrophage Co-culture Model
Marwa Qadri; Gregory Jay; Tannin Schmidt; Khaled A. Elsaid

Poster No. 389

Towards In-Theatre Cartilage Tissue Engineering: Evaluation Of A Tri-layered Collagen-Based Scaffold Seeded With A Rapidly Isolated Chondrocyte/Stromal Cell Co-Culture In A Goat Model Of Osteochondral Defect Repair
Eamon J. Sheehy; Tanya Levingstone; Conor Moran; Grainne Cunniffe; Pedro J. Diaz-Payno; Robert T. Brady; Henrique Vazão Almeida; Simon Carroll; Pieter Brama; Daniel Kelly; Fergal O'Brien

Poster No. 390

Mesenchymal Stromal Cell Derived Paracrine Factors Elicit Regeneration Of Osteoarthritic Cartilage Ex Vivo
Neety Sahu; Michela Bruschi; Pranay Agarwal; Nidhi Bhutani

Poster No. 391

In Vitro Evaluation Of The Effects Of Ultra-purified Alginate On The Performance Of Osteochondral Allografts Harvested From Pig Knees
Rikiya Baba; Daisuke Fukui; Stephanie Y. Adachi; Erikka Linn; Lyhour Lay; Alyssa Alvarez; Tomohiro Onodera; Robert L. Sah; Norimasa Iwasaki; Koichi Masuda

Poster No. 392

Cytoskeleton Disruption Reverses Epigenetic Changes Of Dedifferentiated Chondrocytes
Adrienne K. Scott; Benjamin Seelbinder; Corey P. Neu

Meniscus

Poster No. 393

Bio-inspired Double-cross-linkable Tissue Adhesive For Healing Of Avascular Meniscus Tears
Alexander S. Litrel; Juliet L. Allen; Robert Stanciu; Eugenia Lee; Solaiman Tarafder; Chang H. Lee

Poster No. 394

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Total Hip And Knee Arthroplasty Can Save Lungs

Alisina Shahi; Javad Parvizi; Samih Tarabichi; Lawrence Miller; Ali Oliashirazi

Poster No. 509

Anesthetic- And NSAID-loaded UHMWPE Provide Post-arthroplasty Antibacterial Prophylaxis

Dmitry Gil; Scott Grindy; Shannon Hugard; Nikolay Borodinov; Olga S. Ovchinnikova; Orhun Muratoglu; Heny Bedair; Ebru Oral

Poster No. 510

Comparison Of Commercially-available Calcium Sulfate Bead Kits Loaded With Antibiotic Using In Vitro Large Joint Model

Madison Brown; Omar Yunis; Michael Harris; Matthew Dipane; Andrew Wassef; Vishnu Priya Murali; Scott P. Noel; Joel D. Bumgardner; Edward McPherson; Jessica A. Jennings

Tumors

Poster No. 511

Local And Abscopal Effects Of Fractionated Hindlimb Irradiation On Bone Marrow Cell Populations

Ashley R. Sweeney-Ambros; Timothy A. Damron; Megan E. Oest

Poster No. 512

The Local Administration Of Gelatin Hydrogel Microspheres Incorporating Cisplatin Enhanced Anti-tumor Effects With Less Side Effects In Vivo Bone Metastasis Model

Yutaro Kanda; Kenichiro Kakutani; Takashi Yurube; Zhongying Zhang; Yuji Kakiuchi; Yoshiki Takeoka; Ryu Tsujimoto; Kunihiko Miyazaki; Toru Takada; Yasuhiko Tabata; Ryosuke Kuroda

Poster No. 513

Transcription Factor Twist1 Affects On Expression Of Abc Transporters And Chemoresistance To Doxorubicin In Human Osteosarcoma Cells.

Hiroya Kondo; Joe Hasei; Mahito Nakanishi; Shota Takihira; Miho Kure; Ryoji Joko; Koji Demiya; Suguru Yokoo; Eiji Nakata; Aki Yoshida; Toshiyuki Kunisada; Toshifumi Ozaki

Poster No. 514

Mithramycin A Radiosensitizes Ews:Flt1+ Cells By Inhibiting DNA Double-strand Break Repair Leading To Apoptotic Cell Death

Mei Yun Lin; Megan E. Oest; Timothy A. Damron; Jason A. Horton

Clinical Studies

Poster No. 515

Routine Use Of Synovial Alpha-defensin Does Not Change Clinical Decision-making Related To Periprosthetic Joint Infection

Derek F. Amanatullah; Robin Z. Cheng; James I. Huddleston; William J. Maloney; Andrea K. Finlay; Shanthy Kappagoda; Gina A. Suh; Stuart B. Goodman

Saturday, February 8—Tuesday, February 11, 2020

Poster No. 516

Comparing Metabolite Profiles Of Synovial Fluid And Serum After Knee Injury: A Mouse Study For Early Detection Of Osteoarthritis
Cameron W. Wallace; Alyssa K. Hahn; Priyanka P. Brahmachary;
Ayten E. Erdogan; Ron June

Poster No. 517

Examination Of Advanced Glycation End-product Accumulation Across Pain Phenotypes In Older Adults With Knee Osteoarthritis: Data From The Osteoarthritis Initiative
Victor A. Cheuy; Andrew J. Kittelson

Poster No. 518

Orthopedic Surgeons Prescribe Fewer Opioids To Medicare Part D Patients In States With Medical Cannabis Laws
Cesar D. Lopez; Venkat Boddapati; Charles J. Jobin; Thomas R. Hickernell

Poster No. 519

Interactive Software For Visualization Of 3D Fracture Fixation Biomechanical Principles
Gregory S. Lewis; Hwabok Wee; Jared Vicory; J. Spence Reid

Poster No. 520

The Cost-ineffectiveness Of Manipulation Under Anesthesia For Treatment Of Adhesive Capsulitis
Yen Chen; Travis Doering; Nipun Sodhi; Rushabh Vakharia; Hiba Anis;
Joseph Ehiorobo; Nicholas Sgaglione; Martin Roche; Michael Mont

Poster No. 521

2-year Results With Robotic-assisted Total Knee Replacement: Comparison To A Non-robotic Assisted Group
Laura Scholl; Kenneth Gustke

Poster No. 522

Implementation Of The Risk Assessment And Prediction Tool For Primary Total Joint Arthroplasty Decreased Hospital Length Of Stay And Discharge To Rehab
Devin Walsh; Eric Cohen; Jeremy Raducha; Matthew Quinn; Daniel Reid;
Leigh Hubbard; John Froehlich

Poster No. 523

Osteoarthritis-dependent Alterations In Pelvic And Hip Posture Do Not Require Cup Adaptions In THA
Eike Jakubowitz; Janine Haasper; Stefan Budde; Frank Seehaus;
Andreas Spenst; Christof Hurschler; Henning Windhagen;
Thilo Flörkemeier

Poster No. 524

Algorithm Based Automatic Templating And Patient Race Affect The Accuracy Of Preoperative Primary Total Knee Templates Compared To Manual Digital Templating
Eric L. Smith; Kenneth McAlpine; Thomas Seaver; Ruijia Niu;
Enrique Garcia

Saturday, February 8—Sunday, February 9, 2020

POSTER SESSION 1

The following posters will be displayed Saturday, February 8 and Sunday, February 9.

PS1-001 Biomaterials

Poster No. 525

Creation Of Mineralized, Collagen Fibril Array Scaffolds With Highly Tailorable Mechanical Properties

Brendan H. Grue; Luke C. Vincent; Laurent Kreplak; Samuel P. Veres

Poster No. 526

Bridging Peripheral Nerve Gaps Using Genipin-treated Electrospun Chitosan Nanofibers In A Novel Nerve Guidance Channel Design

Graham Ka-Hon Shea; Michelle Wan-Chi Wong; Connie Yu-Ting Lau; Ying-Shing Chan; Daisy Kwok-Yan Shum

Poster No. 527

Equine Hoof Progenitor Cells: A Model For Altered Tissue Healing From Epithelial To Mesenchymal Transition

Mandi J. Lopez; Qingqiu Yang

Poster No. 528

Electrochemical Evaluation Of Zr₂.5nb, Diffusion Hardened Oxidized Zr₂.5nb, And Cocmo

Amit Parikh; Carolyn Weaver; Vivek Pawar

Poster No. 529

Regulation Of Semaphorin 3c In Bone Remodeling By Microstructured Titanium Surfaces

Jingyao Deng; Ethan Lotz; David Cohen; Zvi Schwartz; Barbara Boyan

Poster No. 530

Determining The Efficacy Of Heat-treated Fluoridated Apatites As A Coating For Percutaneous Osseointegrated Devices In A Pig Back Model

Brian T. Bennett; James Peter Beck; Raleigh Sorbonne; Kent N. Bachus; Jay Agarwal; Sujee Jeyapalina

Poster No. 531

Halloysite Nanotubes As A Potential Chemotactic Agent For Bone Repair

Yue Li; David K. Mills

Poster No. 532

Osseointegration Of Titanium And PEEK Bio-scaffolds

Matthew Morris; Andrew Wong; Daniel Grande

Poster No. 533

Development And Characterization Of Gelatin-based, Nanofiber Mesh As Collagenous Ecm Analog

Philip A. Brudnicki; Matthew Gonsalves; Arjun Dayal; Helen H. Lu

Poster No. 534

Endothelial Cells Promote Osteogenesis In An In Vitro Vascularized Bone Model Developed By 3D Bioprinting

Irene Chiesa; Carmelo De Maria; Anna Lapomarda; Gabriele M. Fortunato; Roberto Di Gesu'; Soheila Aliakbarighavimi; Francesca Montemurro; Rocky S. Tuan; Giovanni Vozzi; Riccardo Gottardi

Poster No. 535

Biomolecular Functionalization And Structural Reinforcement Of A Mineralized Collagen Scaffold For Craniofacial Bone Repair

Brendan Harley; Aleczandria Tiffany; Marley Dewey; Vasiliki Kolliopoulos; Andrey Nosatov

Poster No. 536

Effects Of Seeding Density On Synovium Derived Stem Cell (sdsc) Response On Aligned Polymer Scaffolds

Joon Kyu Lee; Sang Won Lee; Younguk Jang; Helen H. Lu

Poster No. 537

Fibroblasts And Tenocytes Attach And Maintain Their Viability Within Porous Ti In A Bioreactor Setting

David Markel; Paula Dietz; Therese Bou-Akl; Philip Sakalian; Weiping Ren

Poster No. 538

(4-aminopyridine)-PLGA-PEG As A Novel Local Treatment For Acute Peripheral Nerve Injury

Kristen Manto; Prem Kumar Govindappa; Hassan Talukder; John Elfar

Poster No. 539

Mo₃Se₃ Single-chain Atomic Crystals As A Scaffold For Bone Regeneration

Si Young Song; Sung-Jae Kim; Sujung Seo; Inwon Hwang; Jin Woong Lee; Sudong Chae; Jung Heon Lee; Jae-Young Choi

Poster No. 540

Wear Performance Of Damaged Phospholipid Polymer Grafted Highly Cross-linked Polyethylene Liners

Toru Moro; Shihori Yamane; Masayuki Kyomoto; Kazuhiko Ishihara; Sakae Tanaka

Poster No. 541

A Novel Silorane-based Bone Cement For Orthopedic Applications

Grahmm A. Funk; Elizabeth M. Horn; William P. Ensingmer; Nicholas K. Wischmeier; Kathleen V. Kilway; Terence E. McIlff

Poster No. 542

Human Imsc-laden Hydrogel Scaffold For Improving The Durability Of Skin / Implant Interface

Isha Mutreja; Kirk Twaroski; Joan E. Bechtold; Jakub Tolar; Jonathan Forsberg; Conrado Aparicio

Saturday, February 8—Sunday, February 9, 2020

Poster No. 543

Visualization Of Maximum Injectate Volume In Healthy Lumbar Discs: A Pilot Study

Sara Robinson; Madeleine DeClercq; Carly Lockard; Kaitlyn E. Whitney; Johnny Huard; Charles Ho; Thos A. Evans

Poster No. 544

The Effects Of Increasing Radiation Dose And Nitrogen Purge On Extracellular Matrix Scaffold Chemical And Physical Properties

Nicholas J. Sant; Benedikt L. Proffen; Martha M. Murray

Poster No. 545

Corrosion Risk Assessment Of Additively Manufactured Ti6Al4V For Implants

David Joseph Fischer; Divya Bijukumar; Kai Chung; Alejandro Espinoza Orias; Robin Pourzal; Richard Van Arkel; Mathew Thoppil-Mathew

Poster No. 546

Biologic And Mechanical Characterization Of 3D-printed Poly(carbonate Urethane) Porous Scaffolds

Bijan Abar; Alejandro Alonso-Calleja; Cambre Kelly; Natalia von Windheim; Jennifer West; Ken Gall

Poster No. 547

A Physical Mixture Of Silver And Platinum Nanoparticles: Enhanced Antimicrobial Effects And Osteo-promotive Activity

Christina Sengstock; Marina Breisch; Alexander Rostek; Kevin Pappert; Kateryna Loza; Christian Rurainsky; Kristina Tschulik; Matthias Eppel; Marc Heggen; Thomas Schildhauer; Manfred Koeller

Poster No. 548

Development Of Plga-peg-cooh- And Gelatin-based Microsphere Dual Delivery System For Controlled Sequential Release Of Bmp-2 And Igf-1 For Enhanced Osteogenesis Of Mscs

Yan Bai; Seyedsina Moeinzadeh; Sungwoo Kim; Elaine Lui; Youngbum Park; Hua Tan; Weiling Zhao; Xiaobo Zhou; Yunzhi Yang

Poster No. 549

Effect Of Demineralization Time On The Osteoinductivity Of Demineralized Bone Matrix

Nicholas A. Russell; Evan J. Goldberg; Jennifer H. Chen; Frank Vizesi

Poster No. 550

Evaluation Of Pmma And A Novel Silorane-based Cement As A Carrier For Chemotherapy Agents

Grahmm A. Funk; Elizabeth M. Horn; Zachary D. Denton; Dalan M. Pitz; Kathleen V. Kilway; Terence E. McIlff

Poster No. 551

Dual Delivery Of Doxorubicin And Zoledronic Acid From An Injectable Calcium Sulphate/hydroxyapatite Carrier

Yang Liu; Hanna Isaksson; Magnus Tägil; Lars Lidgren; Deepak Bushan Raina

Poster No. 552

Comparison Of Cell Viability And Neurotrophic Factors Between Adipose Tissue And Bone Marrow Tissue Multilineage-differentiating Stress-enduring (muse) Cells Of Mouse

Kenya Saruta; Gentaro Kumagai; Toru Asari; Yasuyuki Ishibashi; Toihide Nagaoki; Kanichiro Wada

Poster No. 553

Sliding Hydrogels With Tunable Molecular Mobility And Ligands As 3D Niche For Accelerating MSC-based Bone Regeneration

Xinming Tong; Fan Yang

Poster No. 554

Gamma-irradiation Of Analgesic Drug-releasing UHMWPE

Ebru Oral; Scott Grindy; Shannon Hugard; Orhun Muratoglu

Poster No. 555

Influence Of CoCr And Al₂O₃ Wear Particles On Autophagy In Human Osteoblast-like Cells (MG63)

Andreas Drynda; Christoph H. Lohmann; Jessica Bertrand

Poster No. 556

In Vitro Electrochemical Corrosion Study Of CoCrMo And TiAlV Orthopedic Alloys In Human Synovial Fluid Retrieved At Time Of Primary TKA

Meredith Perkins; Zachary Carr; William M. Mihalko

Poster No. 557

Hydrophilized Carbon Nanotube Accelerate Neurite Outgrowth

Kunisaki Atsushi

Poster No. 558

Osteoconductive Biomimetic Polymer Ceramic Composite Scaffolds For Bone Tissue Regeneration

Luis F. Arciniaga; Vishakk Rajendran; Douglas A. Loy; Efrén Barrón Villalobos; David A. Gonzales; John A. Szivek; David S. Margolis

Poster No. 559

Controlling The Properties Of 3D Printed Implants Through Manipulation Of Ink Formulation For Meniscus Repair And Regeneration

Wan Ting Sow; Bryan Thean Howe Koh; Wilson Ee Jen Wang

Poster No. 560

An Adhesive Composite Hydrogel For Load-bearing Applications

Peyman Karami; Céline Wyss; Christophe Moser; Pierre-Etienne Bourban; Dominique P. Pioletti

Poster No. 561

Scaffold-Hydrogel Composite For Osteochondral Tissue Engineering

Matthew DiCerbo; Mohammed Mehdi Benmassaoud; Sandra Miskiel; Tae Won B. Kim; Sebastián L. Vega

Poster No. 562

3D Bioprinting An Osteo-Chondral Graft Model

Henintsoa Fanjanianina Andriamifidy; Rayna Berris; Haixiang Liang; Daniel A. Grande

Poster No. 563

3D Printing Bone Composite Material With Adjustable Mechanical Properties

Alexander H. Griffith; Chamith S. Rajapakse; Dietrich James P. Nigh; Rohit S. Shinde; Sofia Miguez; Snehal Shetye; Ariella Schneider

Poster No. 564

Development Of Stabilized Dual Growth Factor-loaded Hyaluronate-collagen Dressing (Dual-HCD) Matrix In Diabetic Mice

Soyeong Joung; Jihyun Kim; Kyoung-Mi Lee; Eun Ae Ko; Sujin Jung; Dawoon Baek; Ik Kyu Park; Kwang Hwan Park; Seung Hwan Han; Jin Woo Lee

Poster No. 565

Extended Biofilm Killing Beyond The Spacer By Antibiotic-loaded Calcium Sulfate Beads: An In Vitro Study

Devendra H. Dusane; Casey Peters; Craig Delury; Sean S. Aiken; Phillip Laycock; Ed McPherson; Anne Sullivan; Jeffrey Granger; Paul Stoodley

Poster No. 566

Developing A Novel All-polymer Poly-ether-ether-ketone (PEEK) Femoral Component For Total Knee Arthroplasty

Dyana Picache; Asit Shah; Shaan Sadhwani; Adam Briscoe

PS1-002

Cartilage and Synovium – Diseases and Disorders

Poster No. 567

Boosted Infrapatellar Fat Pad (IFP)-derived MSC Functionalization Using Specialized Media And 3-D Culturing: Towards IFP-MSC Standardization For Enhanced Osteoarthritis Treatment

Dimitrios Kouroupis; Annie Bowles; Melissa Willman; Carlotta Perucca; Thomas Best; Lee Kaplan; Diego Correa

Poster No. 568

Water Content Of Degenerated Cartilage Increases During Femoral Acetabular Impingement

Jason Ina; Haithem Mustafa; Michael Salata; Ozan Akkus

Poster No. 569

Correlations Among Metabolic Responses And Histologic Characteristics Of Articular Cartilage Obtained From Osteoarthritic Knees

Tyge J. Ortega; Aaron M. Stoker; Chantelle C. Bozynski; Muhammad H. Salim; Hayley G. Ockerhausen; Matthew Z. Gao; Ashwin Garlapaty; Conner B. Schmid; James A. Keeney

Poster No. 570

Ldha Is At The Pathological Nexus Of Metabolism, Inflammation And Oxidative Stress In Chondrocytes

Manoj Arra; Gaurav Swarnkar; Jie Shen; Yousef Abu-Amer

Poster No. 571

Nitric Oxide Causes Mitochondrial Dysfunction In Osteoarthritis

Yoshifumi Ohashi

Poster No. 572

Correlations Among Pro-inflammatory And Degradation-related Biomarkers Released By Articular Cartilage From Osteoarthritic Knees

Tyge J. Ortega; Aaron M. Stoker; Chantelle C. Bozynski; Muhammad H. Salim; Hayley G. Ockerhausen; Matthew G. Gao; Ashwin Garlapaty; Conner B. Schmid; James A. Keeney; James L. Cook

Poster No. 573

The Effect Of Low-intensity Pulsed Ultrasound On Early Joint Inflammation In Post-traumatic Osteoarthritis In Rats

Tyler Feltham; Sharada Paudel; Lew Schon; Zijun Zhang

Poster No. 574

Exploring The Inflammatory Environment Of Osteoarthritis Using An In-vitro Model

Alia Mallah; Mahmoud Amr; Haneen Abu-Sharkh; Arda Gozen; Juana Mendenhall; Bernard Van Wie; Nehal Abu-Lail

Poster No. 575

Biomechanical Consequences Of Progressive Full Thickness Focal Osteochondral Defects Involving The Medial And Lateral Femoral Condyle In Goat Model

Farid Amirouche; Kevin Jacob; Jason Koh; Rohan Kulkarni; Zachary Vassillion; Mark Gonzalez

Poster No. 576

Characterization Of Epigenetic Status Of Synovial Fibroblasts In Inflammatory Arthritis

Umesh Gangishetti; Kyle Jones; Pallavi Bhattaram

Poster No. 577

Phosphoproteomic Screen Implicates Microtubule Activation In Mechanotransduction Of Primary Oa Chondrocytes

Donald L. Zignego; Jonathan K. Hilmer; Brian Bothner; William J. Schell; Ron June

Poster No. 578

Early Osteoarthritic Changes In Chondrocytes From Patients With Hip Dysplasia

Paula A. Hernandez; Zahra Barati; Roberto Gonzalez; Joel Wells; Frances Henson

Poster No. 579

Painful TMJ Overloading Induces Structural Remodeling In The Pericellular Matrix Of TMJ Chondrocytes

Melissa Franklin; Megan Sperry; Evan Phillips; Eric Granquist; Michele Marcolongo; Beth Winkelstein

Poster No. 580

Characterizing Correlations Among Metabolic Responses Of Articular Cartilage And Subchondral Bone From Osteoarthritic Knees

Tyge J. Ortega; Aaron M. Stoker; Matthew Z. Gao; Hayley G. Ockerhausen; Muhammad H. Salim; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James L. Cook

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Identification Of A Gene Mutation Involved In Cartilage Degeneration In Str/ort, A Mouse Line Developing Spontaneous Osteoarthritis
Lingyun Ma; Daichi Shigemizu; Shintaro Akiyama; Rei Jokaji; Hiroyuki Nakamura; Kouichi Ozaki; Ken Watanabe

Poster No. 582

Intraarticular Cartilage Inflammation In Patients With Pre-arthritic FAI Is Similar To Those Patients With Advanced Hip Osteoarthritis
Masahiko Haneda; Muhammad Farooq Rai; Regis J. O'Keefe; Robert H. Brophy; John C. Clohisy; Cecilia Pascual-Garrido

Poster No. 583

Differential Chondrogenic Commitment And Epigenetic Memory Of Ipscs Derived From Healthy And Oa Articular Chondrocytes
Nazir M. Khan; Martha E. Diaz-Hernandez; Priyanka Priyadarshani; Luke J. Mortensen; Hicham Drissi

Poster No. 584

The Role Of Interleukin 6 In Osteoarthritis Associated Cartilage Catabolism And Pain
Yihan Liao; Yinshi Ren; Anthony J. Mirando; Xin Luo; Ru-Rong Ji; Matthew J. Hilton

Poster No. 585

Diet Treatments Reveal Non-obese Metabolic Phenotypes Associated With Early Knee OA In Female Mice
Dominic Cortassa; Erika Barboza Lopes; Albert Batushansky; Mike Kinter; Matlock Jeffries; Dawid Makosa; Melinda West; Timothy M. Griffin

Poster No. 586

Transcription Factor NFAT1 Deficiency Causes Lumbar Facet Joint Osteoarthritis In Mice
Jinxi Wang; Qinghua Lu; Yi Feng; Douglas Burton

Poster No. 587

Mechanobiological Model Combining Inflammation And Abnormal Mechanical Loading Predicts Local Cartilage Degeneration Around Lesion
Joonas P. Kosonen; Atte S. Eskelinen; Gustavo Orozco; Petri Tanska; Mingrui Yang; Matthew S. Tanaka; Benjamin Ma; Xiaojuan Li; Alan Grodzinsky; Rami K. Korhonen

Poster No. 588

Modulation of chondrocyte catabolic activity via regulation of O-GlcNAcylation
Paulo VG Alabarse; Patricia G de Oliveira; Ru L. Bryan

Poster No. 589

TRPV2 Protects Articular Cartilage Via Lubricin Induction
Hideki Nakamoto; Fumiko Yano; Ryota Chijimatsu; Yuji Maenohara; Kosei Nagata; Sakae Tanaka; Taku Saito

PS1-003

Cartilage and Synovium—Growth, Development and Aging

Poster No. 590

Differences In OA Development Between Sexes In The Rat Medial Meniscal Transection Model
Krishna A. Pucha; Jay M. McKinney; Julia M. Fuller; Nick J. Willett

Poster No. 591

TGF β -Alk5-Smad3 Signaling Promotes FOXO1 Expression And Protects Chondrocytes Against Oxidative Stress By Regulating Autophagy
Ichiro Kurakazu; Yukio Akasaki; Hidetoshi Tsushima; Takuya Sueishi; Masakazu Toya; Masanari Kuwahara; Taisuke Uchida; Yasuharu Nakashima

Poster No. 592

Loss Of Autophagy In Chondrocytes Causes Severe Growth Retardation
Yoji Horigome; Hiroko Ida-Yonemochi; Satoshi Waguri; Shunichi Shibata; Masaaki Komatsu

Poster No. 593

Lysyl Oxidase-like 2 Protects Against Progressive And Aging-related Osteoarthritis In Mice
Mustafa Tashkandi; Faiza Ali; Saqer Alsaqer; Thabet Alhousami; Louis Gerstenfeld; Mary Goldring; Manish V. Bais

Poster No. 594

The G Protein Couple Estrogen Receptor-1(GPER-1) Regulates Chondrocyte Proliferation In Chondrocyte-Specific Knockout Mice
Ya-Shuan Chou; Shu-Chun Chuang; Chung-Hwan Chen; Mei-Ling Ho; Je-Ken Chang

Poster No. 595

Collagen-based Three-dimensional Culture Environment Regulated Human Articular Chondrocyte Morphology, Proliferation And Responses To Mechanical Stimulation
Takashi Kanamoto; Minami Hikida; Ken Nakata

Poster No. 596

Increasing Age Of Meniscal Injury Onset Alters Gait Compensations In Rats
Kiara M. Chan; Taylor D. Yeater; Kyle D. Allen

Poster No. 597

Comparison Of Potential Of Synovial Mesenchymal Stem Cells Isolated From Hip Joints Affected By Femoroacetabular Impingement Syndrome And Osteoarthritis
Yoichi Murata; Hajime Utsunomiya; Akihisa Hatakeyama; Hirotaka Nakashima; Yoshiaki Yamanaka; Manabu Tsukamoto; Ichiro Sekiya; Akinori Sakai; Johnny Huard; Marc J. Philippon; Soshi Uchida

Poster No. 598

Circadian Clock Protein Cryptochrome 2 Suppression Promotes Osteoarthritis

Hirofumi Bekki; Tomas Duffy; Naoki Okubo; Merissa Olmer; Oscar Alvarez-Garcia; Martin Lotz

Poster No. 599

Pig Induced Pluripotent Stem Cells For Derivation Of Integration-free Mesenchymal Stem Cells

Hongli Jiao; Ming-Song Lee; Athill Sivapatham; Ellen M. Leiferman; Wan-Ju Li

PS1-004

Cartilage and Synovium – Injury and Healing

Poster No. 600

Osteophyte And Post-Traumatic Osteoarthritis Development Are Diminished By Mechanical Unloading And Anti-Inflammatory Treatment

Allison W. Hsia; Priscilla M. Tjandra; Hailey C. Cunningham; Armaun J. Emami; Melanie E. Mendez; Gabriela G. Loots; Blaine A. Christiansen

Poster No. 601

Preventative Potential Of E5c Hydrogel Loaded With Pgrn-derivative Atsttrin In A Rabbit Model Of Post-traumatic Osteoarthritis

Aubryanna Hettinghouse; Priya Katyal; Changhong Chen; Min Cui; Guodong Sun; Chuanju Liu; Jin Montclare

Poster No. 602

Early Osteoarthritic Changes In Meniscus Repair With Concomitant Anterior Cruciate Ligament Reconstruction

Takaaki Hiranaka; Takayuki Furumatsu; Yusuke Kamatsuki; Shinichi Miyazawa; Yoshiki Okazaki; Yuki Okazaki; Yuya Kodama; Toshifumi Ozaki

Poster No. 603

Degenerative Joint Changes Following Articular Fracture Are More Severe In Mice With T Cell Deficiency

Bridgette D. Furman; Jacob H. Zeitlin; John S. Yi; Steven A. Olson

Poster No. 604

Notch Signaling Is Necessary For The Superior Regenerative Capabilities Of Young Chondrocytes In An In-vitro Model Of Cartilage Healing

Christopher Joseph Roel Gallo; Jessica H. Hu; Nicholas F. Kwon; Anthony J. Mirando; Caitlin E. Marks; Jonathan L. Carter; Matthew J. Hilton; Jonathan C. Riboh

Poster No. 605

Regenerated Lizard Tail Cartilage Is Derived From Blastema Cells Epigenetically Reprogrammed By Macrophage-Derived Factors To Respond To Hedgehog Stimulation With Chondrogenesis.

Conrad Oakes; Megan Hudnall; Thomas Lozito

Poster No. 606

Losartan Modulates The Synovial Myeloid Lineage Response In A Murine Medial Meniscal Destabilization Model Of Osteoarthritis

Aimee C. Colbath; Patrick Haubruck; Christopher Little

Poster No. 607

Cell Volume Change Mediates Mechanotransduction Via Trpv4 In Normal But Not Osteoarthritic Chondrocytes In Viscoelastic Hydrogels

Pranay Agarwal; Hong-Pyo Lee; Piera Smeriglio; Fiorella Grandi; Ovijit Chaudhuri; Nidhi Bhutani

Poster No. 608

Spatial Pattern Of Cellular Response Of Articular Cartilage To Mechanical Injury Depends On Impact Magnitude

Steven Ayala; Michelle L. Delco; Lisa A. Fortier; Itai Cohen; Lawrence J. Bonassar

Poster No. 609

Synovial Fluid Biomarkers Concentrations Can Be Used To Predict The Degree Of Articular Cartilage Injury In The Knee

Matthew T. Kingery; Amit K. Manjunath; David A. Bloom; Elyse J. Berlinberg; Lena Kenny; Eric J. Strauss

Poster No. 610

Pathogenic Role Of Fibroblast Like Synoviocyte In The Particle Induced Periprosthetic Osteolysis

Ashish Ranjan Sharma; Supriya Jagga; Yeon-Hee Lee; Ju-Suk Nam; Sang-Soo Lee

Poster No. 611

Effects Of Osteochondral Allograft Storage Time On Chondrocyte Metabolism

Nicole T. Greco; Aaron M. Stoker; Spencer E. DeLucia; Eli L. Pratte; James P. Stannard; James L. Cook

Poster No. 612

Investigating Successful Articular Cartilage Integration To Inform On Future Tissue Engineering Strategies

Nicholas Groth Merrild; Viktoria Holzmann; Eileen Gentleman; Agi Grigoriadis

Poster No. 613

Chondroprogenitors In Platelet Rich Plasma For Treatment Of Osteoarthritis In A Rabbit Knee Model

Elizabeth Vinod; Soosai Manickam; Upasana Kachroo; Anjali Goyal; Ozlem Ozbey; Jithu James; Solomon Sathishkumar; Boopalan Ramasamy

Poster No. 614

Klf10 Plays An Important Role As A Modulatory Factor In Chondrocyte Hypertrophy In Developing Skeleton

Ji-Yun Ko; Jeong-Won Park; Eugene Lee; Juyoung Kim; Gun-Il Im

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Poster No. 615

Recovery Effect Of Normal Synovium In Response To Damaged Cartilage
Atsushi Urita; Maximilian A. Meyer; Brett T. Madden; Arnavaz Hakimiyan;
Hailey Huddleston; Susan Chubinskaya; Adam B. Yanke

PS1-005

Cartilage and Synovium— Structure, Function and Mechanics

Poster No. 616

Metabolomic Profiles Of Conditioned Media From Primary Human
Osteoarthritic Chondrocytes And Sw1353 Cells
Ethan Viles; Ellen Brooks; Hope Wellhaven; Jenna Starke;
Alyssa K. Hahn; Ron June

Poster No. 617

Quantifying Patellofemoral Cartilage Strains In Response To Running
Lauren N. Heckelman; Alexie D. Riofrio; Emily N. Vinson;
Amber T. Collins; Olivia R. Gwynn; Gangadhar M. Utturkar;
Charles E. Spritzer; Louis E. DeFrate

Poster No. 618

Identification Of M9 High-mannose Glycan Regulating Hypertrophy In
Articular Cartilage
Kentaro Homan; Tomohiro Onodera; Jun-ichi Furukawa;
Masanari Hamasaki; Liang Xu; Takuji Miyazaki; Norimasa Iwasaki

Poster No. 619

Nanosecond Pulsed Electric Fields (nspefs) Enhanced Stemness Of
Mesenchymal Stem Cells Via Downregulation Of Dnmt1
Kejia Li; Kejia Li; Kejia Li

Poster No. 620

Simultaneous Measurements Reveal Distinctly Different Responses To
Osmotic Loading Between Tissue And Cells
Eng Kuan Moo; Scott C. Sibole; Salvatore Federico; Walter Herzog

Poster No. 621

Using The Csca As A Platform For Studying Cartilage Biology: The Role
Of Friction In Chondrocyte Health
Margot S. Farnham; Kyla F. Ortved; David L. Burris; Christopher Price

Poster No. 622

Spatiotemporal Dynamics Of DREADD-driven Calcium
Signaling In Chondrocytes
Ryan C. McDonough; Christopher Price

Poster No. 623

High Resolution Digital Imaging Of India Ink Stained (hiRed-III)s
Articular Cartilage Sees Early Damage Patterns In Young Adult
Human Medial Femoral Condyles And Adult Rabbit Knees With Post-
traumatic Osteoarthritis
Alborz Jelvani; Nasim Eshragh Nia; Julian J. Garcia; Aimee R. Raleigh;
Rebecca L. Drake; Corentin Némoz; Shingo Miyazaki; Junichi Yamada;
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customized Fabrication Of Osteochondral Constructs For Articular Joint Surface Repair In A Rabbit Model

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Shayan Hosseinzadeh; Martha M. Murray; Ata M. Kiapour

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Tendon and Ligament—Diseases and Disorders

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Common ACL-graft Fibroblast Gene Expression And Metabolic Responses To Mechanical Stress

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Julianne Huegel; Courtney A. Nuss; Peter YW Chan; Adnan N. Cheema; Andrew F. Kuntz; Louis J. Soslowsky

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Differential Expression And Cellular Response To TGF- β 1 And BMPs Between Healthy And Torn Human Rotator Cuff Tendons

Wataru Morita; Sarah Snelling; Andrew J. Carr; Stephanie G. Dakin

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Inhibition Of Hmgb1 By Metformin Prevents Mechanical Overloading-induced Tendinopathy

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Emma Garcia Melchor; Lindsay AN Crowe; Shatakshi Sood; Michael McLean; Iain B. McInnes; Moeed Akbar; Neal L. Millar

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Transcriptional Profiling Identifies Extraordinary Diversity Among Limb Tendons

Nathaniel Disser; Jacob Swanson; Max Chao; Susumu Wada; Scott Rodeo; David Oliver; Christopher Mendias

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Kohei Yamaura; Yutaka Mifune; Atsuyuki Inui; Hanako Nishimoto; Takashi Kurosawa; Shintaro Mukohara; Tomoya Yoshikawa; Ryosuke Kuroda

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Bhavita Walia; Alice H. Huang

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Yaying Sun; Wenbo Chen; Jiwu Chen; Shiyi Chen

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Comparison Of Relevant Metabolic Profiles For Male Vs Female Anterior
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Anna Svärd; Per Aspenberg; Pernilla Eliasson

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Tendon and Ligament—Structure, Function and Mechanics

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Relationship Between Predicted ACL Graft Stiffness And Kinematics At
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Jillian E. Beveridge; Analicia L. Behnke; Cristian Maldonado Rodas; Naga
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Three-dimensional Morphology Of The Achilles Tendon At Rest And Under
Load In People With Unilateral Mid-portion Achilles Tendinopathy

Leila Nuri; Steven Obst; Richard Newsham-West; Rod Barrett

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Shear Wave Speed Tracks Local Stress In Non-Uniformly Loaded
Ligaments: A Dynamic Finite Element Study

Jonathon Blank; Joshua Roth; Darryl Thelen

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A Novel Engineered Purified Exosome Product Patch For Tendon Healing: An Explant In An Ex Vivo Model

Shi Guidong; Zeling Long; Yicun Wang; Zhanwen Wang; Andrew Thoreson; Daniel Jacobson; Peter Amadio; Steven Moran; Chunfeng Zhao

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Accumulation Of Advanced Glycation End-products Is Associated With Impaired Energy Storage Of The Human Posterior Tibialis Tendon

Jennifer A. Zellers; Jeremy D. Eekhoff; Remy Walk; Simon Y. Tang; Mary K. Hastings; Spencer P. Lake

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The Anatomy And Length Changes Of The Lateral Patellofemoral Ligament And Lateral Patellotibial Ligament

Jorge Chahla; Hailey P. Huddleston; Eric D. Haunschild; Neal B. Naveen; Taylor Southworth; Adam B. Yanke

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Micro-computed Tomographic Evaluation Of Vascular Morphology In Achilles Tendon Of Rat

Mert Ocak; Sefa Burak Çam; Burak Bilecenoğlu; Petek Korkusuz; Ozan Akkus

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ARFI Imaging Of Musculoskeletal Tissues: Displacement Measurements Correlate To Modulus Of Tissue

Gerald A. Ferrer; Waqas Khalid; Volker Musahl; Kang Kim; Richard E. Debski

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Use Of A Computational Knee Model Producing Failure Strain In The ACL To Elucidate Mechanisms For Non-contact ACL Rupture

Trent M. Guess; Aaron D. Gray; Brad W. Willis; Richard Ma; Dave Echlemeyer; James L. Cook

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Role Of The Posterior Fan-like Extension Fibers Of The Anterior Cruciate Ligament Femoral Insertion On The Failure Load

Ryo Kanto; Aly M. Fayed; Michael P. Smolinski; Monica A. Linde; Patrick Smolinski; Freddie Fu

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Geometric Analysis Of The Native Anterior Cruciate Ligament

Tomomasa Nakamura; Taylor M. Price; Michael A. DiNenna; Monica A. Linde; Patrick Smolinski; Freddie H. Fu

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Replicating Ligament Multi-scale Mechanical Behavior Using Synthetic Architected Fibers

Roberto Alonso Pineda Guzman; Sara Moshage; Sam Goldsmith; Mariana Kersh

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The Effect Of Mechanical Stress On Enthesis Homeostasis

Tachi Saito; Aki Yoshida; Satoshi Nezu; Minami Matsuhashi; Yasunori Shimamura; Takayuki Furumatsu; Keiichiro Nishida; Toshifumi Ozaki

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Classifying The Shape Of The ACL Cross Section

Tomomasa Nakamura; Michael A. DiNenna; Taylor M. Price; Monica A. Linde; Patrick Smolinski; Freddie H. Fu

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A Detailed Evaluation With Knee Arthrometer On The Relationship Between The Knee Stability And Crain Classification In Anterior Cruciate Ligament Injury

Yusuke Sasaki; Satomi Abe; Keisuke Matsukura; Hiroshi Ito

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Compared Between The Cadaveric Mid-substance Cross-sectional ACL Size And The Cross-sectional Anatomical St Double-bundle ACL Reconstruction Autografts Size.

Yoshiyuki Yahagi; Takanori Iriuchishima; Genki Iwama; Makoto Suruga; Takashi Horaguchi; Shin Aizawa

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Tendon and Ligament—Treatment and Therapeutics

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Tendon-derived Extracellular Matrix-based Approach For Tendon Repair

Dan Wang; Enoch H.L. Poon; Shuting Huang; Dai Fei Elmer Ker; Rocky S. Tuan

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Enhancement Of Bone-tendon Graft Integration In Anterior Cruciate Ligament Reconstruction

James Cho-Hong Goh

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Extracorporeal Shock Wave Stimulates The Activity Of Anterior Cruciate Ligament Remnant Cells And Further Regulates The Bone Marrow Stromal Cell Proliferation, Migration, Collagen Synthesis And Differentiation

Cheng-Chang Lu; Shih-Hsiang Chou; Po-Chih Shen; Zi-Miao Liu; Pei-Hsi Chou; Mei-Ling Ho; Yin-Chun Tien

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Eccentric Muscle Loading Improves Tendon Biomechanical Properties In A Murine Model Of Achilles Tendinopathy

Sabah N. Rezvani; Robert W. Grange; Linda A. Dahlgren; P. Gunnar Broolinson; Vincent M. Wang

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ACL Regeneration And Osteointegration With A Novel Silk-fiber Based Scaffold—24 Months Results From A Study In Sheep
Andreas Teuschl; Stefan Tangl; Julia Fink; Xavier Monforte; Heinz Redl; Thomas Nau

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Rotator Cuff Enthesis Regeneration Via Engineered Delivery of Insulin-like Growth Factor-1 Mimics
Anupama Prabhath; Varadraj Vernekar; Ellen Eisenberg; Mary Badon; Takayoshi Otsuka; Godwin Dzidotor; Jean- Emmanuel Avochinou; Sangamesh Kumbar; Nathaniel Dymont; Stavros Thomopoulos; Eckhard Weber; Cato Laurencin

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Liquid Poly-N-Acetyl Glucosamine (sNAG) Improves Achilles Tendon Healing In A Rat Model
Courtney A. Nuss; Julianne Huegel; Sergio Finkielstein; Louis J. Soslowsky

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Driving Native-like Zonal Development In Engineered Entheses For ACL Repair
Michael E. Brown; Jennifer L. Puetzer

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Application Of Umbilical Cord For Tendon Regeneration
Liren Wang; Yuhao Kang; Jia Jiang; Jinzhong Zhao

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In-vivo Ligament Elongation After A Combined Anterior Cruciate Ligament And anterolateral Ligament Functional Reconstruction
Cong Wang; Cai-qi Xu; Jiebo Chen; Jiayu Qiu; Tsung-Yuan Tsai

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Refinement Of Tendon Derived Extracellular Matrix Integration To Microfibrous Scaffolds
Paula Sarmiento; Behman Pourdeyhi; Dianne Little

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The Effects Of Mechanical Loading On The Regulation Of Tendon Transcription Factor Egr1
Yu-Ting Huang; Yuan-Hung Chao; Jui-Sheng Sun

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An Influence Of The Early Rom Exercise And Weight Bearing Rehabilitation After Anterior Cruciate Ligament Reconstruction To The Knee Stability And Tunnels Enlargement
Yusuke Sasaki; Satomi Abe; Keisuke Matsukura; Hiroshi Ito

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Skeletal Muscle—Diseases and Disorders



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Individuals Affected By Patellofemoral Joint Osteoarthritis Have Smaller Hip Abductor Muscle Volumes
David C. Ackland; Matthew Denton; Anthony Schache; Marcus Pandy; Kay Crossley

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Determinants Of Circulating Stem/progenitor Cells For Improving Muscular Dystrophy Pathologies Via Heterogenetic Parabiosis Mouse Model
Aiping Lu; Ping Guo; Johnny Huard

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Sarcopenia Is Associated With An Increased Risk For Revision Of Total Joint Arthroplasty (TJA)
Adam Miller; Manpreet Tiwana; Michael Patetta; Anshum Sood; Mark Gonzalez

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Diabetic Family History Associated With Severity Of Peripheral Neuropathy
Ushasi Naha; Adam Hamidi; Awais Hussain; Amit Parekh; Anshum Sood; Michael Patetta; Gautam Malhotra; Alfonso Mejia; Maria Sieminow; Mark Gonzalez

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Evaluation Of Tendon Elasticity With Ultrasound Vibro-Elastography In Carpal Tunnel Syndrome Patients
Yoichi Toyoshima; Boran Zhou; Kazutoshi Kubo; Kai-Nan An; Steve L. Moran; Xiaoming Zhang; Peter C. Amadio; Chunfeng Zhao

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Effect Of Zonisamide On Acetylcholine Receptor Cluster At The Neuromuscular Junction
Taro Inoue; Bisei Ohkawara; Hiroaki Nakashima; Shiro Imagama; Naoki Ishiguro; Kinji Ohno

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Klf15 Influences Immobilization-induced Human Muscle Atrophy
Ryo Yoshikawa; Takahiro Niikura; Keisuke Oe; Tomoaki Fukui; Yohei Kumabe; Takahiro Oda; Kenichi Sawauchi; Yoshitada Sakai; Ryosuke Kuroda; Yu Hirata; Wataru Ogawa

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Skeletal Muscle—Growth, Development and Aging

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Vibration Acceleration Enhances Proliferation And Promotes An Early Phase Of Differentiation In Mouse Myoblast C2c12 Cells
Seira Sato; Takashi Kanamoto; Yang Chong; Tatsuhiro Hanai; Minami Hikida; Wen Shi; Tatsuo Mae; Kazunori Shimomura; Tomoki Ohori; Takehito Hirose; Hideki Yoshikawa; Ken Nakata

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ADAMTS10 Accelerates C2C12 Myocyte To Myoblast Differentiation

Sarah Stanley; Nandaraj Taye; Dirk Hubmacher

Poster No. 774

Fisetin Attenuates Senescence In Aged, Culture Expanded, And Banked Human Adipose Derived Stem Cells

Michael Mullen; Jake Billings; John Mitchell; Sudheer Ravuri; Johnny Huard

Poster No. 775

Muscle ECM Response To Exercise Is Lost With Age

Danielle Steffen; Chris Lopez; George Marcotte; Daniel West; Keith Baar

Poster No. 776

The Aging-associated Accumulation Of Skeletal Muscle Collagen, Matrix Cross-linking, And Advanced Glycation End-products Persists On Decellularized Muscle Matrix

Lucas C. Olson; Tri M. Nguyen; Rebecca L. Heise; Zvi Schwartz; Barbara D. Boyan; Michael J. McClure

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Skeletal Muscle – Injury and Healing

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Early Mitochondrial Dysfunction After VML May Be Explained By Ca^{2+} -induced Complex I Inactivity

Jennifer McFaline-Figueroa; Anna S. Nichenko; Albino G. Schifino; Jarrod A. Call

Poster No. 778

Blunt Force Trauma Activates Satellite Cells To Contribute To Heterotopic Ossification

Beth Bragdon; William Moore; Yu Liu; Amanda Molinelli; Louis C. Gerstenfeld

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Thymic Stromal Lymphopoietin Production In Skeletal Muscle Occurs Via The NF- κ B Pathway Following Acute Injury Induced By Injection Of Cardiotoxin

Takashi Ando; Taro Fujimaki; Yoshihiro Takayama; Jiro Ichikawa; Satoshi Ochiai; Tetsuo Hagino; Hirotaka Haro

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Differentiation Kinetics Of Human Perivascular Cells For The Treatment Of Chronically-injured Muscle

Temidayo Aderibigbe; Jonathon Gatto; Robert H. Shahinyan; Ajith K. Subhash; Elan Karlin; Haibin Xi; April Pyle; Bruno Peault; Frank A. Petrigliano; Ayelet Dar

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Skeletal Muscle – Structure, Function and Mechanics

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Low-magnitude, High-frequency Vibration Treatment Attenuates Age-related Neuromuscular Junction Degeneration

Zhengyuan Bao; Can Cui; Simon Kwoon-ho Chow; Ling Qin; Wing-hoi Cheung

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Children-specific Lower Limb Musculoskeletal Model For Gait Analysis

Pierre-Eddy Dandrieux; Danilo S. Catelli; Mario Lamontagne; Jérémy Rossi

Poster No. 783

Dynamic Scapulohumeral Rhythm: Comparison Of Healthy Shoulders And Shoulders With Rotator Cuff Tears

Naoya Kozono; Naohide Takeuchi; Takamitsu Okada; Satoshi Hamai; Hidehiko Higaki; Takeshi Shimoto; Satoru Ikebe; Hirotaka Gondo; Takahiro Senju; Yasuharu Nakashima

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The Prevalence Of Hairline Fractures In Periprosthetic Femoral Fractures Using Computed Tomography

Joel Thomas; David Rodriguez-Quintana; Steven Schroeder; Houston Braly; Sabir Ismail; Philip C. Noble

Poster No. 785

Change In The Rotator Cuff Moment Arm Following Supraspinatus Partial And Complete Tear

Farid Amirouche; Jason Koh; Sonia Pradhan; Gregoire Clement; Dan Raybalko; Aimee Bobko; Benjamin Goldberg

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Skeletal Muscle – Treatment and Therapeutics

Poster No. 786

Global Knockout Of NF- κ B / p65 Reduces Skeletal Muscle Cell Senescence In Severe DMD Murine Model

Biao Kuang; Jing Wang; Wenzhong Wei; Yiqing Wang; Natasha G. Dark; Ying Tang; Bing Wang

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Novel Measurement Technique Of Muscle Load With A Sweat Lactate-sensing Wearable Device

Daisuke Nakashima; Yuta Maeda; Yasuhiko Takeuchi; Yoshinori Katsumata; Yasushi Sera; Kazuki Sato; Morio Matsumoto; Masaya Nakamura; Takeo Nagura

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In Vivo Visualizing The Fate Of Intra-articular Injected Mesenchymal Stem Cells During Treatment Of Supraspinatus Tendon Tears

Yimeng Yang; Jun Chen; Shiyi Chen

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Mechanically Stimulated Exosome Production In C2C12 Myoblasts Improves Proliferation And Myogenic Differentiation

Michael Mullen; Sudheer Ravuri; Chelsea Bahney; Johnny Huard; Nicole Ehrhart

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Bone—Diseases and Disorders

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Characterization Of The Pathophysiological Processes Of Osteoarthritis Using RNA Sequencing Data Of Subchondral Bone

Margo Tuerlings; Rodrigo Coutinho de Almeida; Evelyn Houtman; Marcella van Hoolwerff; Eka Suchiman; Nico Lakenberg; Rob GH Nelissen; Yolande FM Ramos; Ingrid Meulenbelt

Poster No. 791

Splenectomy Deteriorate The Bone Microarchitecture In A Thalassemia Mouse Model

Hui Sun; Ling Wang; Ella Meyler; Hongshuai Li

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Ultrasonic Assessment Of Bone Mineral Density At The 1/3 Radius With A 10-second Test

Jonathan J. Kaufman; Gangming Luo

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Subchondral Bone Properties In Normal And End-stage Osteoarthritic Bone Of The Proximal Humerus

Nikolas K. Knowles; Jonathan Kusins; Melanie P. Columbus; George S. Athwal; Louis M. Ferreira

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How Does Lbx1 Function In The Differentiated Paraspinal Muscle Phenotypes And Muscle-bone Crosstalk In Adolescent Idiopathic Scoliosis (AIS)

Yujia Wang; Zhenhua Feng; Ka-lo Cheng; Jiajun Zhang; Leilei Xu; Tsz-ping Lam; Alec LH Hung; Jack CY Cheng; Yong Qiu; Wayne YW Lee

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Plasmin Generation And Failure Of PAI-1 Expression By Hypoxic Osteoarthritic Osteoblasts

Shuo Wang; Jennifer Racine-Avila; Roy K. Aaron

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Evaluation Of An Experimental Model Of Bone Marrow Lesions Using The Ovine Femoral Condyle

Holly L. Stewart; Jeremiah T. Easley; Kurt T. Selberg; Brad B. Nelson; Christian M. Puttlitz; Chris E. Kawcak

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Mechanical Properties And Matrix Properties Attenuate Cancer Spheroid Growth In 3-D Gelatin Culture

Kimberly Curtis; Jessica Schiavi; Myles Mc Garrigle; Vatsal Kumar; Laoise McNamara; Glen Niebur

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Ultrastructural Analysis Of Different Skeletal Cell Types In Mucopolysaccharidosis Dogs At The Onset Of Postnatal Growth

Zhirui Jiang; Yian Khai Lau; Margret L. Casal; Lachlan J. Smith

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A Genetic Model Of Familial Dysautonomia Decreases Bone Quality Across Multiple Length-scales

Hannah Flook; Ghazal Vahidi; Marc Mergy; Frances Lefcort; Chelsea M. Heveran

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Long Term Bone Remodeling Of The Femoral Neck In Osteoporotic Rats Following Local Delivery Of Bioactive Molecules

Deepak Bushan Raina; Irfan Qayoom; Aurimas Sirka; Arun Kumar Teotia; K. Elizabeth Tanner; Hanna Isaksson; Ashok Kumar; Lars Lidgren; Magnus Tägil

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The Effect Of Statin Treatment On Bone Structure In An Adult Mouse Model Of CKD-MBD

William G. Schroeder; Kendra DeHay; Kelly Crane; Douglas Adams; Karen B. King

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Decreased Bone Mass And Vertebral Endplate Tissue Mineral Density In An Aged Diabetic Mouse Model

Kaitlyn Broz; Remy Walk; Donald Aboytes; Simon Y. Tang

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Correlations Among Pro-inflammatory, Degradation-related, And Bone Metabolism Biomarkers Released By Bone Obtained From Patients With Knee Osteoarthritis

Matthew Z. Gao; Aaron M. Stoker; Hayley G. Ockerhausen; Tyge J. Ortega; Muhammad H. Salim; Ashwin Garlapaty; Conner B. Schmid; Chantelle B. Bozynski; Aaron M. Stoker; James L. Cook

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The Effect Of Local Administration Of MicroRNA Highly Expressing In Osteonecrosis Of The Femoral Head On Bone Regeneration

Hideki Saka

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Comparison Of Clinical-CT Segmentation Techniques For Measuring Subchondral Bone Cyst Volume In Glenohumeral Osteoarthritis

Aoife MR Pucchio; Nikolas K. Knowles; George S. Athwal; Louis M. Ferreira

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Role Of Autophagy In Glucocorticoid-induced Osteoporosis In Mice

Xu Li; Jiankun Xu; Bingyang Dai; Lizhen Zheng; Xuan He; Haiyue Zu; Ling Qin

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Bone – Growth, Development and Aging

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A Modified P-nitrophenyl Fucoside Sugar Inhibits Osteoclast Maturation

Christopher S. Harding; Samuel Hatfield; Jason W. Ashley

Poster No. 809

Sex-specific Influence Of ESR1 Single Nucleotide Polymorphisms On Bone Quality

Julia A. McGuinness; Megan McClanahan; Nisha Kapani; Sean Haimowitz; Harriet Martin; Karuna Panchapakesan; Elmer Rajah; Austin Gillies; Heather Gordish-Dressman; Dustin Hittel; Eric Hoffman; Laura L. Tosi

Poster No. 810

Gamma-tocotrienol Increases Osteoblast Function And May Improve Their Function After Exposure To Electronic Cigarette Liquid Which May Decrease Osteoblast Function

Wylie Masterson; Gabriel Millare; Catherine Ambrose; Mark Prasarn; James Kellam

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Local Administration Of Meclozine Promotes The Longitudinal Growth Of Selected Bone In Mouse Model

Tadashi Nagata; Masaki Matsushita; Kenichi Mishima; Yasunari Kamiya; Bisei Ohkawara; Kinji Ohno; Naoki Ishiguro; Hiroshi Kito

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Treatment Of Partial Growth Arrest Using Cylindrical Costal Osteochondral Graft

Ryo Orito; Kiyoshi Yoshida; Masato Kobayashi; Hideki Yoshikawa

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Timed Inhibition Of Notch Signaling Disrupts Osteoclast Precursor Quorum Sensing

Amber L. Framstad; Jason W. Ashley

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Genetic Variation In STARD3NL And RPS6KA5 Impacts Bone Quality In Healthy Young Adults

Harriet Martin; Sean Haimowitz; Nisha Kapani; Megan McClanahan; Julia McGuinness; Karuna Panchapakesan; Elmer Rajah; Austin Gillies; Heather Gordish-Dressman; Eric Hoffman; Dustin Hittel; Laura L. Tosi

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Genetic Variation In COL1A1 Rs1800012 Influences Skeletal Phenotypes In Young Adults

Nisha Kapani; Megan McClanahan; Harriet Martin; Sean Haimowitz; Julia McGuinness; Karuna Panchapakesan; Elmer Rajah; Austin Gillies; Dustin Hittel; Eric Hoffman; Heather Gordish-Dressman; Laura L. Tosi

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Evaluating The Compressive Strength Of Bioactive Glass Infused Calcium Phosphate Cement

Robert Thomas Warren; Sidney Bae; Shrikar Bondre

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A Novel Non-invasive Method For Predicting DEXA Measured Bone Mineral Density And Fracture Risk Using Standard Anthropometric Measures

Bradley S. Lambert; Steven Martin; Joshua Daum; Katharine Harper; Patrick McCulloch

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Is Metal-induced Delayed Type Hypersensitivity Potentiated Osteolysis Influenced By Sex And/or Age?

Lauryn Samelko; Marco Caicedo; Kyron McAllister; Joshua J. Jacobs; Nadim J. Hallab

Poster No. 819

Magnesium Cationic Tissue Microenvironment Facilitates Intramembranous Ossification

Kelvin Yeung; Kenneth MC Cheung; Jie Shen

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Biocompatibility Of Titanium (Ti) Porous Structure Coated On Cobalt-chromium (CoCr) Substrate By 3D Printing Process Based On Direct Energy Deposition (DED) Technology

Hunyeong Ban; Taeyang Kwak; Joonho Wang; Chunghee Sonn; Dongjin Ryu; Jungsung Kim; Dohyoung Lim

Poster No. 821

Roles Of Estrogen Receptor Alpha In Regulation Of Bone Healing

Ruei-Ming Chen; Pei-I Lin; Yi-Ling Lin

Poster No. 822

Epigenetic Regulation Ngf-mediated Osteogenic Differentiation Of Human Mesenchymal Stem Cells

Zhenqing Liu; Peng Deng; Cun-Yu Wang; Christine Hong

Poster No. 823

Low Energy Irradiation Of Short-range UV-LED Prevents Osteoporosis Associated With Vitamin D Deficiency In Senescence-accelerated Mouse Prone 6

Kazuya Makida; Yoshihiro Nishida; Daigo Morita; Yoshitoshi Higuchi; Satoshi Ochiai; Taisuke Seki; Kunihiro Ikuta; Naoki Ishiguro

Poster No. 824

Parental Diet-induced Obesity Alters Subchondral Bone Quality In Aged Offspring

Natalia S. Harasymowicz; Yun-Rak Choi; Arin K. Oestreich; Ryota Nishishiba; Chia-Lung Wu; Ruhang Tang; Farshid Guilak

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Quantitative Spatial Mapping Of Osteoblast Lineage Progression In Embryonic Development

Caleb Jones; Joseph M. Collins; Jong Hyun (Thomas) Kim; Nathaniel Dymont; Joel D. Boerckel

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Air Pollution Has Differential Effects On Bone During Growth That Correlate With Genetic Background And Gut Microbiome

Dana A. Godfrey; Robert D. Maynard; Alison Elder; Douglas J. Adams; Michael J. Zuscik; Cheryl L. Ackert-Bicknell

Poster No. 827

Linking Gut Microbiota To Bone Through Nods

Melanie Gareau; Matteo Pusceddu; Alice Wong; Damian Genetos

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Regional Alteration Of Vertebral Size And Shape Following Loss Of Hox5 Genes In Zebrafish

Samara E. Williams; Claire J. Watson; Cecilia B. Moens; Ronald Y. Kwon

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Deubiquitinase Usp18 Regulates Aging And Stemness Of Human Bone Marrow-derived Mesenchymal Stem Cells

Sujin Jung; Jihyun Kim; Kyoung-Mi Lee; Eun Ae Ko; Soyeong Joung; Dawoon Baek; Kwang Hwan Park; Young-Min Chun; Jin Woo Lee

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Bone—Injury and Healing

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Magnesium Accelerates Bone Formation During Distraction Osteogenesis Via Cgrp-enhanced Angiogenesis

Ye Li; XU Jiankun; Qin Ling

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Mechanisms Of Radiation-induced Expansion Of Marrow Adipose Tissue

Jason A. Horton; Aaron Maymin; James T. Boyer

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How Does Cyclic Mechanical Loading Enhance Osteoporotic Fracture Healing? The Role Of Dentin Matrix Protein 1 (DMP1)

Meng Chen Michelle Li; Zheng Yuan Bao; Simon Kwoon Ho Chow; Ronald Man Yeung Wong; Wing Hoi Cheung

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Temporal Dynamics Of Digit Regeneration In LG/J And SM/J Mice

Feini Qu; Kristin L. Lenz; Muhammad F. Rai; Farshid Guilak

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The Aged Macrophage Phenotype Is Detrimental To Fracture Healing

Daniel Clark; Sloane Brazina; Diane Hu; Theodore Miclau; Mary Nakamura; Ralph Marcucio

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Ras Associated With Diabetes May Play A Role In Fracture Nonunion Development In Rats

Takahiro Oda; Takahiro Niikura; Tomoaki Fukui; Keisuke Oe; Yohei Kumabe; Kenichi Sawauchi; Ryo Yoshikawa; Ryosuke Kuroda

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Assessment Of Bone Healing Agents For Promoting Bone Regeneration In Spaceflight

Ariane Zamarioli; Ushashi Dadwal; Paul J. Childress; Nabarun Chakraborty; Aarti Gautam; Rasha Hammamieh; Melissa A. Kacena

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Low-magnitude High-frequency Vibration Modulates Inflammatory Response Via The P38 Mapk Pathway In Osteoporotic Fracture Healing In Rat Model

Yu Ning Chim; Zheng Yuan Bao; Wing Hoi Cheung; Simon Kwoon Ho Chow

Poster No. 838

Utilizing Advanced Medical Imaging To Inform Clinical Assessment Of Distal Radius Fractures

Phillip Spanswick; Prism Schneider; Cory Kwong; Steven Boyd; Robert Korley

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3D Co-Culture Of MSCs And Macrophages Promotes An Anti-Inflammatory Phenotype With Superior Osteogenesis

Claire Rhee; Monica Romero Lopez; John Hanlon; Masahiro Maruyama; Tzuhua Lin; Chi-Wen Lo; Tahsin Khan; Masaya Ueno; Takeshi Utsunomiya; Zhenyu Yao; Bruce Bunnell; Hang Lin; Rocky Tuan; Stuart B. Goodman

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Adenosine Receptors A2a And A3 Activate Genes In Parallel And Complementary Pathways In Pulsed-electromagnetic-field Induced Osteoblast Differentiation

Niladri S. Kar; Daniel Ferguson; Nianli Zhang; Erik I. Waldorff; James T. Ryaby; Joseph A. DiDonato

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Early Fracture Healing Prediction By Non-invasive Multi-location Direct Electromagnetic Coupling

Jakob G. Wolynski; Kevin M. Labus; Christian M. Puttlitz; Kirk C. McGilvray

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The Effect Of Intermittent PTH Treatment On Peri-implant Tissue Formation In A Murine Model Of Implant Instability

Branden R. Sosa; Kevin Staats; YingZhen Niu; Vincentius J. Suhardi; Kathleen Turajane; Yu Han Chen; Andrew Thomson; Nadim Abboud; Reinhard Windhager; Tania Pannellini; Matthew B. Greenblatt; Lionel Ivashkiv; Mathias P.G. Bostrom; Xu Yang

Poster No. 843

Evaluation Of Global Gene Expression And Cellular Composition In Regenerate Tissues Formed During Masquelet Treatment

Andrea I. Alford; Nishant N. Gohel; Rafael Senos; Steve Goldstein; Kurt D. Hankenson; Mark E. Hake

Poster No. 844

Sex Differences In Systemic Bone And Muscle Loss After Fracture

Benjamin Osipov; Manali P. Paralkar; Henning T. Langer; Suraj J. Pathak; Priscilla M. Tjandra; Armaun J. Emami; Keith Baar; Blaine A. Christiansen

Poster No. 845

A Murine Model Of Osseointegration Failure And Its Comparison With Clinical Samples

Vincentius J. Suhardi; Yingzhen Niu; Kevin Staats; Branden R. Sosa; Kathleen Turajane; Andrew Thomson; Nadim Abboud; Tania Pannellini; Matthew B. Greenblatt; Lionel B. Ivashkiv; Mathias P.G. Bostrom; Xu Yang

Poster No. 846

Intramembranous Bone Regeneration Is Accelerated In Constitutively Active Lrp5 Mutant Mice

Frank C. Ko; Meghan Moran; Ryan Ross; Rick Sumner

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Developing A Combat-relevant Translatable Large Animal Model Of Heterotopic Ossification

Dustin Williams; Richard Epperson; David Rothberg; Raymond Olsen; Brooke Kawaguchi; Ryan Rasmussen; John Maxwell; Mary Dickerson; Paul Pasquina; John Shero; Brad Isaacson

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A Novel Mouse Model To Study Fracture Healing At The Proximal Femur

Melanie Haffner-Luntzer; Birte Weber; Charles Lam; Verena Fischer; Miriam Kalbitz; Anita Ignatius; Ralph S. Marcucio; Theodore Miclau

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Comparison Of Supplementary Plate Versus Cerclage Wire Fixation Methods To Diaphyseal Engaging Stem Revision For Vancouver B2 Peri-prosthetic Femoral Fractures

Janna van den Kieboom; Ruben Oganessian; Venkatsaiakhil Tirumala; Paul Walker; John Drago; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Christian Klemm; Young-Min Kwon

Poster No. 850

Reverse Dynamization: Actively Manipulating The Mechanical Environment To Accelerate Bone Healing In A Large Animal Osteotomy Model

Vaida Glatt; Mikhail Samchukov; Alex Cherkashin; Christopher Iobst

Poster No. 851

Comparison Of CT-derived Material Property Assignment Laws In Clinical Assessment Of Tibia Fracture Healing

Peter Schwarzenberg; Hannah L. Dailey

Poster No. 852

A Novel Intramedullary Nail To Control Interfragmentary Motion In Diaphyseal Tibial Fractures

Navid Ziran; Colin McCarty; Nathan Ho; Neda Gilmartin; Edward Ebramzadeh; Sang-Hyun Park; Sophia Sangiorgio

Poster No. 853

Bone Resorption And Formation Rates Are Reduced In Late Stage Healing Of Dominant Arm Distal Radius Fractures

Penny R. Atkins; Kerstin Stock; Lukas Horling; Nicholas Ohs; Caitlyn J. Collins; Patrik Christen; Michael Blauth; Ralph Müller

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Egr1 Regulates Prx1 Expression Through CXCL12 Signaling In Fracture Repair

Alessandra Esposito; Marissa Cruz; Tieshi Li; Fang Fang; Xiaofei Li; Anna Spagnoli

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Bone Tissue Is Affected By Experience In The Adaptive Immunity In Homeostasis And Fracture Healing

Christian H. Bucher; Claudia Schlundt; Dag Wulsten; Hans-Dieter Volk; Georg N. Duda; Katharina Schmidt-Bleek

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Decellularized Bovine Bone Extracellular Matrix For Bone Tissue Engineering: Scaffold Preparation And Characterization

Sara A. Hassouna Elsayed; Matthew J. Allen

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Upper Extremity Fractures In Patients With Idiopathic Parkinson's Disease: A Case Series

Te-Feng Arthur Chou; Chun Yao Chang; Chun-Ching Huang; Ming-Chau Chang; Wei-Ming Chen; Tung-Fu Huang

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Local Zinc Treatment Enhances Callus Biomechanical Properties After Fracture In Diabetic Rats

Kevin Innella; Yazan Kadkoy; Anthony Lin; Brian B. Moriarty; Ryan Behmer Hansen; Charlotte Von Hoffmann; Alan Zhong; Anton Kral; Joseph Benevenia; Jessica Cottrell; J. Patrick O'Connor; Sheldon S. Lin; David N. Paglia

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High Speed Surgical Cutting Generates High Surface Temperatures For Short Duration But Dissipated Temperature Remains Below 40°C And Enhances Regenerative Potential In Ex Vivo Bovine Bone

Veasna Sum-Coffey; Conor E. McCarthy; Peter Curtin; Laoise M. McNamara

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Gut Permeability Unexpectedly Not Increased With Particle Challenge In An In Vivo Rat Implant Model

Meghan M. Moran; Maliha Shaikh; Robin M. Voigt; Christopher B. Forsyth; Brittany M. Wilson; Amarjit S. Virdi; Ali Keshavarzian; D. Rick Sumner

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Comparison Of The Bone Formation Ability Of Mesenchymal Stem Cells Injected At Day 3 With That Injected At Week 3 A Randomized controlled Trial In A Clinically Relevant Model

Murtadhah M. K. Jalal; Robert Wallace; A. Hamish RW Simpson; Bruno Peault

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Biomimetic Hematoma Successfully Repairs Large Bone Defects With A Dramatically Reduced Dose Of Rbnp-2

Anna Woloszyk; Kevin Tetsworth; Vaida Glatt

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The Concept Of Sport Sampling: Preventing Youth Athlete Injury, A Systematic Review And Meta-analysis.

Seth L. Carder; Nicolas E. Giusti; Lisa Vopat; Armin Tarakemeh; Jordan Baker; Bryan G. Vopat; Mary K. Mulcahey

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The Induced Membrane Technique: Effects Of Antibiotic-impregnated Spacers On Healing Of A Critical-size Femoral Defect In A Rat Model

Hening Sun; Charles Godbout; Gareth Ryan; Ikran Ali; Emil Schemitsch; Aaron Nauth

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Kenichi Sawauchi; Takahiro Niikura; Keisuke Oe; Tomoaki Fukui; Yohei Kumabe; Takahiro Oda; Ryo Yoshikawa; Ryosuke Kuroda

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Mitchell E. Maisel; Rachel L. Lenhart; Taylor L. Loeffler; Jill M. Martin; Chad J. Beck; Gerald F. Harris; Gregory J. Schmeling; Jessica M. Fritz

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Jong Woong Park; Chae Ahn Song; Hyun Guy Kang; June Hyuk Kim; Han-Soo Kim

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Clavicle Fractures: Associated Trauma And Morbidity

Dominick Vincent Congiusta; Kamil Amer; Pooja Suri; Mark Adams

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The Outcomes Of Surgically Treated Distal Tibia Salter-Harris Type III And IV Fractures

Rahul Gupta; Zachary Winthrop; William Hennrikus

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Demineralization Expedites Diffusion Of Osmium Contrast Into Human Osteochondral Samples

Rebecca L. Drake; Jonathan H. Wong; Albert C. Chen; Beatrice A. Tierra; William D. Bugbee; Jiang Du; Eric Y. Chang; Robert L. Sah

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Effects Of In Vitro Vitamin B Treatment On Human Bone Mechanical Properties

Taraneh Rezaee; Rachana Vaidya; Jacob Aaronson; John Riordan; Lamy Karim

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Effects Of Contact Deformations On Flexural Rigidity Measurements Of Long Bone Surrogates

Katrina Hamburger; Shenji Rong; Baixuan Yang; Caitlyn J. Collins; Heidi Ploeg

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Effectiveness Of Bone Mass Reveals The Mechanical Mechanism Of Microarchitecture Varying Trabecular Elasticity

Yongqiang Jin; Teng Zhang; Kam Yim Sze; Weijia Lu

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Joan E. Llabre; Grażyna E. Sroga; Deepak Vashishth

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Rintaro Okada; Takashi Kaito; Joe Kodama; Junichi Kushioka; Daisuke Tateiwa; Yuichiro Ukon; Zynep Bal; Kai Yamato; Minoru Kawakami; Hideki Yoshikawa

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Correlation Between Underlying Bone Biomechanical Properties And The Tissue'S Ex Vivo Metabolism And Histological Properties

Hayley G. Ockerhausen; Aaron M. Stoker; Matthew Z. Gao; Tyge J. Ortega; Muhammad H. Salim; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James L. Cook



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Trabecular Bone Growth In An Adolescent Cystic Fibrosis Rat Model: A Pilot Study

Maged Awadalla; Egon Perilli; Saulo Martelli; Mark Gardner; Kaye S. Morgan; Marcus Kitchen; Patricia Cmielewski; Bryant Roberts; David Parsons; Martin Donnelley

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Bone Strength And Micro-architectural Adaptation To Exercise: An Hr-pqct Study Of Unilateral Differences Between Distal Radii Of Male Racquet Players And Controls

Saija Kontulainen; James Johnston

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C57bl6 Mice Tibia Do Not Weaken Under Long-term Intense In Vivo Fatigue Loading

Vincent A. Stadelmann; James L. Rosenberg; Ursula Eberli; Stephan Zeiter; Claire Acevedo

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Effect Of Hypogravity On The Trabecular Architecture Of Lumbar Vertebrae

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Osteoblast Lineage PPR Loss Increases Cortical Bone Fracture Toughness In Mice

Conor S. Daly-Seiler; Joseph Gardinier; Chunbin Zhang; Brooke Brichacek; Erika Auner; Yawen Li

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Quantitative Characterization Of Mechanoelectric Coupling Property Of Collagen In Osteogenesis Imperfecta Model Via Piezoresponse Force Microscopy

Jinha Kwon; Do-Gyoon Kim; Hanna Cho

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Atomic Force Microscopy-Infrared Spectroscopy (AFM-IR) Characterization Of Matrix/Mineral Domain Sizes: Relationship To Nanomechanics?

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Correlation Of Subchondral Bone Biomechanical Properties To Metabolic Responses, Histological Grade, And Biomechanical Properties Of Articular Cartilage From Osteoarthritic Knees

Hayley G. Ockerhausen; Aaron M. Stoker; Tyge J. Ortega; Muhammad H. Salim; Matthew Z. Gao; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James L. Cook

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Differentiation Stage Of Human Bone Marrow Stem Cells Determines Their Catabolic Response To Fluid Shear Stress

Cornelia Bratengeier; Aneta Liszka; Astrid D. Bakker; Jörg Schilcher; Anna Fahlgren



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Increased Density In Proximal Sesamoid Bones Of Racehorses Is Associated With The Onset Of Cyclical Loading And Bone Pathology

Babatunde Ayobami Ayodele; Peta L. Hitchens; Eleanor J. Mackie; R. Chris Whitton

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High-fat Diet And Receptor For Advanced Glycation End-product Impact Bone Structure And Mechanical Properties In A Sex-dependent Manner In A Mouse Model

Samuel J. Stephen; Stacyann Bailey; Divya Krishnamoorthy; Danielle N. D'Erminio; James C. Iatridis; Deepak Vashishth

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Interfacial Bonding Between Mineral Platelets And Its Effect On Mechanical Properties Of Bone

Siyuan Pang; Henry Schwarcz; Iwona Jasiuk

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Age-Related Decrease In Vertebral Body Strength Depends On The Sex Of Balb/c Mice

Kate Garrett; Dominique harris; Amy Creecy; Sasidhar Uppuganti; Jeffry S. Nyman

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Experimental Assessment Of Trabecular Bone Strain Shielding Resulting From Periprosthetic Cementation

Sourabh Boruah; Casey Paton; Brandon Scott; Orhun K. Muratoglu; Kartik M. Varadarajan

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Micro-mechanical And Micro-structural Investigation Of Bovine Calcified Cartilage And Subchondral Bone Plate In Progressive Cartilage Tissue Degeneration

Shuvashis Das Gupta; Josh Workman; Mikko Finnilä; Simo Saarakkala; Ashvin Thambyah

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Improved Prediction Of Femoral Fracture Toughness In Mice By Combining Standard Medical Imaging With Raman Spectroscopy

Christine Massie; Emma Knapp; Keren Chen; Andrew Berger; Hani A. Awad

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Local Delivery Of Interleukin-1 Receptor Antagonist As A Strategy To Enhance Long Bone Healing

William Arthur Lackington; Maria Hildebrand; Mauro Alini; Stephan Zeiter; Keith Thompson

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Therapeutic Delivery Of Mechanically Activated Osteocyte-derived Extracellular Vesicles (maevs) For Bone Regeneration

Kian Eichholz; Ian Woods; Mathieu Riffault; Gillian Johnson; Nian Shen; Michele Corrigan; Marie Noelle-Labour; Kieran Wynne; Michelle Lowry; Lorraine O'Driscoll; David Hoey

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IL-4 Overexpressing Mesenchymal Stem Cells Enhance Bone Healing In A Murine Long Bone Critical-sized Defect Model

Masaya Ueno; Chi-Wen Lo; Takeshi Utsunomiya; Danial Barati; Tzu-hua Lin; Yusuke Kohno; Bogdan Conrad; Claire Rhee; Masahiro Maruyama; Ning Zhang; Tahsin N. Khan; Xinming Tong; Zhenyu Yao; Monica Romero-Lopez; Stefan Zwillingenberger; Fan Yang; Stuart B. Goodman

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Electrospray Enabled Peptide Coating Of Structural Bone Allografts For Enhanced Repair And Reconstruction Of Femoral Segmental Defect

Xinping Zhang; Zhuang Zhou

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Sclerostin Antibody-induced Differential Transcriptional Expression In Bone Of Btl/+ Osteogenesis Imperfecta Mouse

Hsiao H. Sung; Esmeralda Blaney Davidson; Michelle S. Caird; Kenneth M. Kozloff

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Indomethacin Effects On Cellular Composition And Extracellular Protein Profile Of Cancellous And Cortical Bone Healing

Love Tatting; Maria Turkina; Magnus Bernharsson; Pernilla Eliasson; Jan Ernerud; Anna Fahlgren

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Dose Dependent Effects Of A Novel Selective EP4 Prostaglandin Receptor Agonist On Treatment Of Critical-size Femoral Bone Defects In A Rat Model

Corina Vater; Elisabeth Mehnert; Lucas Maximilian Matuzewski; Henriette Bretschneider; Julia Bolte; Stefan Zwillingenberger

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Pdgf-bb Overexpression Under A Weak Promotor Mitigates il-4 Associated Inhibition Of Osteogenesis By Mesenchymal Stem Cells

Ning Zhang; Chi-Wen Lo; Takeshi Utsunomiya; Masaya Ueno; Masahiro Maruyama; Claire Rhee; Tahsin N. Khan; Zhenyu Yao; Stuart B. Goodman

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Preconditioned Mesenchymal Stem Cells Modulate Bone Healing During The Acute Inflammatory Phase In Vivo

Takeshi Utsunomiya; Ning Zhang; Tzu-hua Lin; Yusuke Kohno; Masaya Ueno; Chi-Wen Lo; Masahiro Maruyama; Monica Romero-Lopez; Tahsin Khan; Claire Rhee; Zhenyu Yao; Stuart Goodman

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Mesenchymal Stem Cell Survival In Near-anoxia And Functions Pertinent To Angiogenesis Rely On The Presence Of Glucose

Guotian Luo; Cyprien Denoed; Nathanael Larochette; Esther Potier; Hervé Petite

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Promoting Bone Formation And Healing In Segmental Defects Through Ectopic Induced Membrane

John Ruder; Katherine Li; Paul Matuszewski; J. Stewart Buck; Didier Dréau; Chandra Williams; Rachel Seymour; Joseph R. Hsu

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Viability Of Native Bone And An Autologous Homologous Bone Construct During Short-term Cold Storage

Jessie Nicodemus Johnson; Richard Mortensen; Marytheresa Ifediba; Ian Robinson; Lyssa Lambert; Franklin Kidd; Haley Benzon; Haley Benzon; Caroline Garrett; Pratima Labroo; Nikolai A. Sopko

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Tissue-Derived Bioactive Substrate Demonstrates Osteoinductive Properties

Pratima Labroo; Eric Chan; Jessie Nicodemus Johnson; Richard Mortensen; Lyssa Lambert; Franklin Kidd; Nicole Anderson; Ashley Allphin; Vonda Searle; Caroline Garrett; Nikolai A. Sopko

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Effect Of Dental Implant Factors On The Insertion Energy

Baixuan Yang; Ainara Irastorza Landa; Peter Heuberger; Heidi-Lynn Ploeg

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Metaphyseal Clamshell Osteotomy For Long Bone Deformity

Daniel Allen Bravin; Makenna Rice; Mark Lee

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Impact Of Radiofrequency Ablation (RFA) On Bone Quality In Metastatic Femora

Soroush Ghomashchi; Tricia Chinnery; Faye Habach; Cari M. Whyne; Margarete K. Akens

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Comparison Of Efficacy And Safety Of High-dose Low-frequency And Low-dose High-frequency Bisphosphonate Treatment In A Rat Model Of Late-stage Chronic Kidney Disease

Ryo Fujita; Masahiko Takahata; Tomohiro Shimizu; Masahiro Ota; Dai Sato; Hideyuki Kobayashi; Daigo Nakazawa; Hiromi Kimura-Suda; Fumiya Nakamura; Norimasa Iwasaki

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Large Defect Scaffolds Show Loading Changes After Bone Regeneration, Dynamization And Rod Removal

John A. Szivek; Efen Barron Villalobos; David A. Gonzales; David S. Margolis

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Suppression Of Nf-kb-induced Chronic Inflammation Enhances Bone Healing In The Murine Continuous Polyethylene Particle Infusion Model
Takeshi Utsunomiya; Ning Zhang; Tzuhua Lin; Yusuke Kohno; Masaya Ueno; Chi-Wen Lo; Masahiro Maruyama; Monica Romero-Lopez; Tahsin Khan; Claire Rhee; Zhenyu Yao; Stuart Goodman

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Siglec-15-targeting Therapy Protects Against Glucocorticoid-induced Osteoporosis With A Suitable Profile For Growing Skeleton In Rats
Dai Sato; Masahiko Takahata; Masahiro Ota; Chie Fukuda; Eisuke Tsuda; Tomohiro Shimizu; Ryo Fujita; Hideyuki Kobayashi; Shigeto Hiratsuka; Norio Amizuka; Tomoka Hasegawa; Norimasa Iwasaki

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Evaluation Of The Host Inflammatory Response To Recombinant Human Platelet-derived Growth Factor In A Pre-clinical Rat Paraspinal Implant Safety Model
Joseph G. Lyons; Jonathan T. Yamaguchi; Joseph A. Weiner; Allison C. Greene; Mitchell J. Hallman; David J. Ellenbogen; Soyeon Jeong; Vivek Shah; Silvia Mindardi; Chawon Yun; Wellington K. Hsu; Erin L. Hsu

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Enhancement Of Osteogenesis By Inflammation-sensing, Pdgf-bb Over-expressing Mesenchymal Stem Cells
Chi-Wen Lo; Ning Zhang; Masaya Ueno; Takeshi Utsunomiya; Masahiro Maruyama; Claire Rhee; Tahsin N. Khan; Zhenyu Yao; Stuart B. Goodman

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Synergistic Effects Of BMP-2 And Naturally Occurring Growth Factors For The Optimized Therapy Of Critical-size Bone Defects
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Dexamethasone Releasing Lbl Coatings To Prevent Aseptic Loosening Of Un-cemented Prosthesis
Polina Prokopovich

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Two Cell Models To Estimate The Effects Of Raspberry Ketone On Macrophage Phenotype
Kevin N. Patel; Joel D. Bumgardner; Richard A. Smith

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Lps Alters Osteogenicity Of Stem Cells In Cell-specific Manner In Vitro And In Vivo And Pdgf-aa Restores The Bone Forming Ability Of Lps-inhibited Stem Cells
Abhijit S. Dighe; Wanan Xiao; Gina Beck; Di Zhu; Sean Sequeira; Quanjun Cui

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Re-engineering Abaloparatide To Target Fracture Repair Following Systemic Injection
Stewart A. Low; Jeffery Nielsen; Cheyanne Woolwine; Philip S. Low; Jonathan Hicks

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The Enhancement Of Osseointegration By Ti Carbonate Carburization For Joint Replacements: In-vitro Study
Kai-yuan Cheng; Rajini Nagaraj; Divya Bijukumar; Markus A. Wimmer; Michael McNallan; Mathew T. Mathew

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Improving Patient Compliance With Low-intensity Pulsed Ultrasound (LIPUS) Treatment By Explanation With Document
Yohei Kumabe; Tomoaki Fukui; Takahiro Niikura; Keisuke Oe; Takahiro Oda; Kenichi Sawauchi; Ryo Yoshikawa; Ryosuke Kuroda

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Plantar Gap Widening After Intramedullary Screw Fixation For A Fifth Metatarsal Stress Fracture: Does It Become A Risk Factor?
Shota Morimoto; Tomoya Iseki; Takatoshi Morooka; Shinnichi Yoshiya; Juichi Tanaka; Toshiya Tachibana

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Carbon Nanoparticles Bind To Regenerating Adult Zebrafish Bone
Isaac Skromne; Esmail Miyanji; Rachel DuMez

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Feasibility Of Osteoscopic Surgery For Enchondromas Of The Toes
Hiroyuki Futani; Shunsuke Kumanishi; Tatsuo Sawai; Hayato Fukuzaki; Mai Nogami; Takayuki Kawaguchi; Toshiya Tachibana

PS1-027 Spine – Diagnostics

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Three-dimensional Depth Sensor Imaging To Identify Adolescent Idiopathic Scoliosis: A Prospective Multicenter Cohort Study
Terufumi Kokabu; Noriaki Kawakami; Koki Uno; Toshiaki Kotani; Teppei Suzuki; Yuichiro Abe; Norimasa Iwasaki; Hideki Sudo

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Early Changes In Bone Mineral Density Measured By QCT After Anterior Cervical Spine Surgery
Stephan N. Salzmann; Ichiro Okano; Courtney Ortiz Miller; Erika Chiapparelli; Fabian Winter; Jennifer Shue; John A. Carrino; Andrew A. Sama; Frank P. Cammisia; Federico P. Girardi; Alexander P. Hughes

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Digital Tomosynthesis For Assessment Of Bony Ingrowth In Porous Titanium Implants: A Proof Of Concept Study
Daniel Oravec; Victor Chang; Yener N. Yeni

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Noboyuki Takeshige; Alejandro A. Espinoza Orias; Howard S. An; Motohiro Morioka; Nozomu Inoue

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Quantitative Analysis Of Perineural Fat Predicts Severity Of Foraminal Stenosis

Vimal Gunasekaran; Robin Karr; Benjamin Meyer; Andrew Klein; Kevin M. Koch

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Global Deletion Of Sost Increases Osterix/sp7 In Mildly Degenerated Intervertebral Discs

Tori Kroon; Alexander Robling; Nilsson Holguin

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Reducing Mechanical Stress In Pediatric Spondylolisthesis Can Make Restoring Of Lower Vertebral Rounding Deformity: A Study: A Rat Lumbar Spondylolysis Model

Hiroaki Manabe; Kazuta Yamashita; Kosaku Higashino; Masatoshi Morimoto; Yoshihiro Ishihama; Fumitake Tezuka; Yoichiro Takata; Toshinori Sakai; Koichi Sairyo

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Conditional Abrogation Of Lbx1 In Skeletal Muscle Results In Defective Forelimb Development

Yusuke Matsushashi; Keisuke Horiuchi; Yohei Takahashi; Kota Watanabe; Shiro Ikegawa; Morio Matsumoto; Kazuhiro Chiba

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Finite Element Model Of Region-specific Pediatric Spine Growth

Christian R. D'Andrea; Sriram Balasubramanian

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The Influence Of 3D Curve Severity And Sex On Paraspinal Muscle Fatty Infiltration In Patients With Adolescent Idiopathic Scoliosis

Connor D. Grant; David B. Berry; Christine Farnsworth; Samuel R. Ward; Bahar Shahidi; Peter O. Newton

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The Effects Of Teriparatide On Osteogenic Differentiation Of Mscs From Patients With Ossification Of Posterior Longitudinal Ligament

Ryo Araki; Ryota Yamauchi; Toru Asari; Kanichiro Wada; Gentaro Kumagai; Sunao Tanaka; Ayako Sasaki; Kenichi Furukawa; Yasuyuki Ishibashi

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Usefulness Of 6-minute Walking Test Using Body Wearable Triaxial Acceleration Sensor For Lumbar Spinal Stenosis Patients With Neurogenic Claudication

Daichi Kinno; Hideki Murakami; Hirooki Endo; Daisuke Yamabe; Minoru Doita

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Impact Of Allogeneic Blood Transfusion On Postoperative Morbidity And Mortality In Major Thoracic And Lumbar Posterior Spine Fusion And Instrumentation Surgeries

Swamy Kurra; Prisco DeMercurio; Julia Tollin; Reza Gorji; Fenghua Li; Richard A. Tallarico; Mike H. Sun; Nathaniel R. Ordway; William F. Lavelle

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Spine—Injury and Healing

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A Transplant Of Schwann Cells In An Injectable Nanofiber-hydrogel Composite Enhances Anatomical Repair And Functional Recovery After Cervical Spinal Cord Injury In Adult Rats

Kentaro Yamane; Yohshiro Nitobe; Agnes E Haggerty; Inés Maldonado-Lasunción; Toshifumi Ozaki; Martin Oudega

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Zonisamide Suppresses Activation Of Spinal Microglia And Exhibits Analgesic Effect

Hiroyuki Koshimizu; Bisei Ohkawara; Shiro Imagama; Shunsuke Kanbara; Taro Inoue; Hiroyuki Tomita; Naoki Ishiguro; Kinji Ohno

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Autologous Multipotent Stem Cells And Ensheathing Cells From Olfactory Mucosa For The Treatment Of Spinal Cord Injury

Christina Sengstock; Markus Roevekamp; Stefan Volkenstein; Stefan Dazert; Thomas Schildhauer; Manfred Koeller

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Role Of Rock In The Spinal Cord Injury Induced Neuropathic Pain

kazuya kishima; Toshiya Tachibana; Keishi Maruo; Arizumi Fumihiro; Kazuki Kusuyama

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Enoxaparin Promotes Recovery After Axonal Injury By Affecting Ptpσ

Sadayuki Ito; Kazuma Sakamaoto; Tomoya Ozaki; Masaaki Machino; Masayoshi Morozumi; Shiro Imagama; Kenji Kadomatsu

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Decreased Expression Of MKP-4 In DRG: Possible Mechanism For Inflammation-induced Neuropathic Pain

Dawei Xu; Zhiming Cui

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A Randomized, Controlled, Single-center Study Of The Use Of A Cooling Blanket In Thoracolumbar Spinal Fusions

Anthony O. Wing

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Spine—Structure, Function and Mechanics

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The Effects Of Age, Head Position, And Pathology On The Cervical Neural Foramen Area

Clarissa LeVasseur; Samuel Pitcairn; Jeremy Shaw; William Donaldson; Joon Lee; William Anderst

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Statistical Shape Modeling Of The C1 Posterior Arch Towards Surgical Planning And Implant Placement

Martine E. McGregor; Chang K. Paik; Nicole E. Schneider; Tim L. Lasswell; Parham Rasoulinejad; Stewart D. McLachlin

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Neck Strength Intra-person Correlations And Predictability From Muscle Geometry Are Sex-dependent

Curran P. Reddy; Yu Zhou; Bocheng Wan; Suman K. Chowdhury; Xudong Zhang

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Are There Different Types Of Spinopelvic Mobility In Patients Awaiting Total Hip Arthroplasty?—A Prospective, Diagnostic Cohort Study

Moritz M. Innmann; Christian Merle; Philippe Phan; Paul Beaulé; George Grammatopoulos

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Synergistic Motion Characteristics Of The Cervical Intervertebral And Facet Joints During An In Vivo Dynamic Motion Of The Neck

Haiming Wang; Chaochao Zhou; Yan Yu; Haiqing Mao; Peter Ostergaard; Guoan Li; Thomas Cha

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The Effects Of Posterior Spinal Correction And Fusion On Postural Balance In Patients With Idiopathic Scoliosis

Satoshi Osuka; Hideki Sudo; Takeshi Chiba; Norimasa Iwasaki; Harukazu Tohyama

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Intervertebral Range Of Motion Characteristics Of Normal Cervical Spinal Segments (C0-T1) During In-vivo Neck Motions

Chaochao Zhou; Haiming Wang; Cong Wang; Tsung-Yuan Tsai; Yan Yu; Peter Ostergaard; Guoan Li; Thomas Cha

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Finite Element Based Test Protocol To Evaluate The Effect Of Distraction On Growth Rods Spanning Over Multiple Spinal Segments For Pediatric Scoliosis Patients

Niloufar Shekouhi; Dave Dick; Max William Baechle; Dilpreet Kaur Kaeley; Vijay K. Goel

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Development Of An In-vitro Spinal Biomechanical Model For Physiologic Strain Of The Intervertebral Disc And Vertebral Body

Yangyang Yang; Lei He; Fuping Li; Jie Zhao; Tsung-Yuan Tsai

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Human Annulus Fibrosus Failure Mechanics Are Correlated With Tissue Composition

Benjamin Werbner; Mohamed Habib; Aaron J. Fields; Grace D. O'Connell

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Development Of A Novel Finite Element Model Of A Thoracolumbar Spine With Ribcage And Muscle Forces To Simulate Scenarios Closer To In Vivo

Anoli Shah; Yogesh Kumaran; Joseph Zavatsky; Robert McGuire; Hassan Serhan; Vijay K. Goel

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Development Of A Novel In-vitro Model Of Bertolotti Syndrome For Biomechanical Analysis And Surgical Intervention

Robb Colbrunn; Joshua Golubovsky; Ryan Klatte; Tara Nagle; Isaac Briskin; Vikram Chakravarthy; Callan Gillespie; Naveen Jasty; Edward Benzel; Michael Steinmetz

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In Vivo Three-dimensional Kinematic Study Of Single Hollow Screw In The Treatment Of Odontoid Process Fracture

Yanlong Zhong; Haoqun Yao; Benyu Tan; Quanwei Song; Zongmiao Wan

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Risk Of Screw And Adjacent Bone Failures After A Spinopelvic Fixation Technique (s2-alar-iliac And S3-alar-iliac)

Dong-Min Son; Sung-Jae Lee; Su-Heon Woo; Tae-Hyun Park; Sang-Won Moon; Byeong-Sam Choi

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A Novel Surgical Technique Using A Trans-discal Screw At The Upper Instrumented Vertebra (UIV) Of Long Posterior Thoracolumbar Instrumented Fusions To Reduce The Occurrence Of Proximal Junction Kyphosis (pjk)—A Biomechanical Finite Element Study

Anoli Shah; Alekos Theologis; Vijay Goel

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Effect Of Forward Head Posture On The Cervical Spine Biomechanics

Muzammil Mumtaz; Deniz Erbulut; Sean Manuel Q. Cordero; Vijay K. Goel

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Radiographic Predictor Of Gastro Esophageal Reflux Disease In Adult Spinal Deformity Patients

Atsuyuki Kawabata; Toshitaka Yoshii; Takashi Hirai; Masato Yuasa; Hiroyuki Inose; Atsushi Okawa

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Life Is Not Necessarily A Kyphosing Event: Evaluation Of Sagittal Parameters Of Standing Full Body Radiographs In Asymptomatic Volunteers Over Decades Of Life

David Calabrese; Christopher Kleck; Andriy Noshchenko; Evalina Burger; Vikas Patel; Christopher Cain; David Ou-Yang; Nolan Wessell

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Spine—Surgical and Non-Surgical Interventions

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Changes On The Adjacent Level Biomechanics After Posterior Lumbar Fusion Surgery—3 And 12 Month Postoperative Evaluation Using Parametric Personalized Finite Element Analyses
 Mohammad Nikkhoo; Zahra Khoz; Meng-Ling Lu; Chen-Ju Fu; Wen-Chien Chen; Chih-Hsiu Cheng; Chi-Chien Niu; Po-Chih Lin

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The Effects Of Graft Type And Residual Motion On Patient-reported Outcomes After Anterior Cervical Discectomy And Fusion
 Richard Wawrose; Clarissa LeVasseur; Samuel Pitcairn; Jeremy Shaw; Joon Lee; William Donaldson; William Anderst

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Abaloparatide Enhances Fusion And Bone Formation In A Rabbit Spinal Arthrodesis Model
 William Hahn; Hiroshi Kumagai; Harold G. Moore; Alexander Koo; Edward Purdue; Sravisht Iyer; Matthew Cunningham

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Anterior Vertebral Body Tether Simulations Using An Adolescent Idiopathic Scoliosis Patient-specific Finite Element Model
 Girish Viraraghavan; Christian D'Andrea; Sriram Balasubramanian

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Is Direct Vertebral Rotation Accurately Modeled Using Pure Moment Testing?
 Matthew Day; Sean L. Borkowski; Nathan Ho; Ashleen Knutsen; Anthony Scaduto; Richard Bowen; Edward Ebramzadeh; Sophia Sangiorgio

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Biomechanics Of Minimally Invasive Surgery Vs. Open Surgery Muscle Reduction In Transforaminal Lumbar Interbody Fusion: A Finite Element Study
 Anoli Shah; Brandon Zakeri; Madison Anzelc; Yogesh Kumaran; Akhil Katragadda; Gayathri Plakkot; Joseph Zavatsky; Robert McGuire; Hassan Serhan; Hossein Elgafy; Anand Agarwal; Deniz Erbulut; Vijay K. Goel

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Biomechanical Investigation Between Semi-rigid And Rigid Lumbar Fixation During Daily Activities—Poroelastic Finite Element Analyses
 Mohammad Nikkhoo; Zahra Khoz; Chi-Chien Niu; Chen-Ju Fu; Meng-Ling Lu; Wen-Chien Chen; Chih-Hsiu Cheng; Li-Wen Ku

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Determination Of The Elution Kinetics Of Antibiotic-loaded Calcium Sulfate Beads And Powdered Antibiotic Bolus For Surgical Site Infections
 Devendra H. Dusane; Casey Peters; Kelly Moore; Jacob Brooks; Rebecca Wilson-van Os; Craig Delury; Phillip Laycock; Sean S. Aiken; Ed McPherson; Anne Sullivan; Jeffrey Granger; Paul Stoodley

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Kinematic Change After Cervical Endoscopic Surgery
 Chihyeon Kim; Chun Kee Chung; Hicham Drissi

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Influences Of Cervical Structures On The Kinematic Behavior Of The Cervical Spine
 Rene Jonas; Robert Demmelmaier; Hans-Joachim Wilke

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Pelvic Incidence-lumbar Lordosis Mismatch Less Than 10 Degree (PI-LL<10) Has Limited Applicability As A Criterion Of Adult Sagittal Spinal Deformity (ASD) Correction
 Vikas Patel; Christopher Cain; David Calabrese; Andriy Noshchenko; Evalina Burger

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Effect Of Implant Profile On The Biomechanical Stability Of Sacroiliac Joint Fusion Construct
 Samuel Fang; Frank Larosa

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The Urgency Of Early Intervention On Traumatic Cervical Spine Injuries: Comparative Study Of Early Versus Delayed Surgery
 Angelica Lee Real; Mary Ruth Padua-Rodolfo

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Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2) May Elicit A Sex-based Differential Response In A Rat Posterolateral Fusion Model
 Mark A. Plantz; Jonathan T. Yamaguchi; Joseph Lyons; Tejas Nandurkar; Jonathan Paul; Soyeon Jeong; Silvia Minardi; Chawon Yun; Stuart R. Stock; Wellington K. Hsu; Erin L. Hsu

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Repurposed FDA-Approved Small Molecules With The Potential To Enhance Spinal Fusions
 Sreedhara Sangadala; Chi H. Kim; Jae-Young Hong; George Beck; Scott D. Boden; Hicham Drissi; Steven Presciutti

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Intervertebral Disc—Diseases and Disorders

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Evaluation Of Intervertebral Disc Metabolic Responses To Injury And Sustained RANTES Stimulation Using A Rat-tail Whole Organ Explant Model
 Elizabeth A. Fletcher; Aaron M. Stoker; Emma C. LePage; Theodore J. Choma; James L. Cook

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The Concentration Of Aggrecan Fragments In Intervertebral Discs Differ Between Diseased And Healthy Tissues
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Imaging The Local Biochemical Content Of Native And Injured Intervertebral Disc Using Fourier Transform Infrared Microscopy
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Development Of A Translational Canine Model Of Human Intervertebral Disc Degeneration

Naomi N. Lee; Jake S. Kramer; Chaiyapruk Pundee; Aaron M. Stoker; Christina L. Goldstein; Don K. Moore; Theodore J. Choma; James L. Cook

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Comparison Of Biomarker Production By Nucleus Pulposus From Non-chondrodystrophic And Chondrodystrophic Canine Intervertebral Discs

Naomi N. Lee; Aaron M. Stoker; Jacob S. Kramer; Theodore J. Choma; James J. Cook

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Effects Of Cyclic Compression Magnitude On Pro-inflammatory And Degradative Responses By Whole Organ Intervertebral Discs

Emma C. LePage; Aaron M. Stoker; Emma N. Wickland; Theodore J. Choma; James L. Cook

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Effects Of Compressive Load Frequency On Pro-inflammatory And Degradative Responses By Whole Organ Intervertebral Discs

Emma C. LePage; Aaron M. Stoker; Emma N. Wickland; Theodore J. Choma; James L. Cook

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Compartment Specific Gene Signatures Of Annulus Fibrosus And Nucleus Pulposus Cells

Lorenzo Mario Fernandes; Camila Trochez; Nazir Khan; Steven Presciutti; Gregory Gibson; Hicham Drissi

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Characterizing Biomarker Profiles In Spondylolisthesis Patients With Degenerative Lumbar Intervertebral Discs

Jacob S. Kramer; Aaron M. Stoker; Naomi N. Lee; Chaiyapruk Pundee; Christina L. Goldstein; Don K. Moore; Theodore J. Choma; James L. Cook

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Ionizing Radiation Exposure Contributes To Intervertebral Disc Degeneration In-vitro And In Mouse Model

Joseph Chen; Gwendolyn Sowa; Nam Vo

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Intervertebral Disc – Growth, Development and Aging

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Opposite Roles Of Tumor Necrosis Factor Receptor 1 And 2 In Disc Degeneration

Changhong Chen; Guodong Sun; Jean De La Croix; Wenyu Fu; Chuan-ju Liu

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Expression Of Artemin, Member Of Glial Cell Line-derived Neurotrophic Factor Family Ligands, In The Human Intervertebral Disc

Junichi Yamada; Koji Akeda; Tatsuya Iwasaki; Norihiko Takegami; Akihiro Sudo

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Loss Of Glut1 Leads To Intervertebral Disc Degeneration Through Upregulation Of Hedgehog Pathway

Jun Ying; Cuicui Wang; Dongyeon Joanna Kim; Jie Shen; Hongting Jin; Peijian Tong; Regis O'Keefe

Poster No. 988

Differences In Post-translational Proline 3-hydroxylation In Type II Collagen From Mature Intervertebral Disc

David M. Hudson; Audrey McAlinden; Aysel A. Fernandes; Russell J. Fernandes

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Identifying The Transition From Cell Proliferation To Matrix Production During Early Growth In Neonatal Mouse Caudal Intervertebral Discs

Olivia M. Torre; Victoria Mroz; Robert C. Hoy; Alice H. Huang; James C. Iatridis

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Food, Not Feces: Evidence For Lactate-dependent Metabolic Symbiosis In Intervertebral Discs

Dong Wang; Robert Hartman; Chao Han; Stacy Wendell; Michael Jurczak; James Kang; Joon Lee; Gwendolyn Sowa; Nam V. Vo

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Potential Biomarkers of The Mature Intervertebral Disc Identified At The Single Cell Level

Thomas Lufkin

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Hepatocyte Growth Factor Regulates Hif-1 α -induced Nucleus Pulposus Cells Proliferation That Is Mediated By The Mapk Pathway

Tomonori Itsuji; Hitoshi Tonomura; Hidenobu Ishibashi; Kan Oyabu; Ryota Takatori; Yasuo Mikami; Takashi Tanida; Masaki Tanaka; Masateru Nagae

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Outer Annulus Fibrosus Differentiation Is Characterized By Filamentous Actin And Decreased Collagen Type 2 Expression

Rose Giroux Long; Cliff Tabin

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Rose Giroux Long; Stephen Ferguson; Lorin Benneker; Dai Sakai; Zhen Li; Abhay PAndit; Dirk Grijpma; David Eglin; Stephan Zeiter; Tanja Schmid; Ursula Eberli; Dirk Nehrbass; James Iatridis; Mauro Alini; Sibylle Grad

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Utilizing Decellularized Nucleus Pulposus Tissue To Shift Macrophage Phenotype And Regenerate The Intervertebral Disc

David Lillyman; Logan Piening; Rebecca Wachs

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Inflammatory Response Of Rat Caudal Intervertebral Discs To Ex Vivo Dynamic Loading

Hagar Kenawy; Samantha Marshall; Andy J. Lee; Quynhhoa Nguyen; Clark T. Hung; Nadeen O. Chahine

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Optimization Of Disc Degeneration Model In Rat Lumbar Spine

Juliane D. Glaeser; Wafa Tawackoli; Derek Ju; Jae Yang; Linda Kanim; Khosrowdad Salehi; Victoria Yu; Zhanna Khnkoyan; Zachary NaPier; Hyun Bae; Dmitry Sheyn

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Percutaneous Lumbar Annulotomy: A Novel Technique To Establish A Rat Model Of Intervertebral Disc Degeneration

Brandon Couch; Richard Wawrose; Joseph Chen; Malcolm Dombrowski; Bryan Rynearson; Dong Wang; Kevin Bell; Joon Lee; Gwendolyn Sowa; Nam Vo

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Selective Silencing Of P38 Mapk Isoforms Differentially Regulate Transcription Profile Of Genes Controlling Matrix Homeostasis In Human Nucleus Pulposus Cells Under Inflammatory Stress

Ayesha Firdous; James Kang; Rebecca Studer; Nam Vo; Gwendolyn Sowa

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Distribution Of Advanced Glycation End Products In Lumbar Intervertebral Discs Of Streptozotocin-induced Diabetic Rats

Ryuji Fujihara; Takahiro Negayama; Kunihiro Oka; Shingo Yoshitake; Tetsuji Yamamoto

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Role Of The Pericellular Matrix In Regulating The Biosynthetic Response Of Nucleus Pulposus Cells To Osmotic Loading

Carly Krull; Devina Purmessur; Benjamin Walter

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Biomechanical Alterations Of Annulus Fibrosus At Both Nano And Microscales After In-situ Immobilization In Rats

Ting Liang; Yan-Jun Che; Hui-Lin Yang; Zong-Ping Luo

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The Metabolic Activity Of Inner Annulus Fibrosus Cells Within Tissue Engineered Constructs Regulates Phenotype

Raeesa Matadar; Rita Kandel; Paul Santerre

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Poroelastic Parametric Numerical Analysis Of Cartilage Endplate Sclerosis On Fluid Flow In The Nucleus Pulposus

Chaudhry R. Hassan; Wonsae Lee; David E. Komatsu; Yi-Xian Qin

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Effects Of Intervertebral Disc Degeneration On Mechanical And Electrical Signals At The Disc-vertebra Interface

Weiyong Gu; Qiaoqiao Zhu; Mark Brown

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New Zealand Rabbits May Not Be Ideal Model Organisms For Lumbar Instability Degeneration Models

Xuyang Zhang; Fengdong Zhao

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Annulus Fibrosus Tissue Engineering Using 3D Printed Poly(ϵ -caprolactone) Scaffolds With Oriented Ply Structure

Andrea J. Vernengo; Zhen Li; Karen Mys; Peter Varga; Sibylle Grad; Mauro Alini; David Eglin

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Engineered Total Disc Replacements In A Large Animal Model Recapitulate Native Disc Structure And Function

Sarah E. Gullbrand; Beth G. Ashinsky; Dong Hwa Kim; Lachlan J. Smith; Dawn M. Elliott; Thomas P. Schaer; Robert L. Mauck; Harvey E. Smith

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Scaling Up The Generation Of Discogenic Cells, An Investigational Cell Therapy For Disc Degeneration

Lara I. Silverman; Daniel Rodriguez-Granrose; Gala Dulatova; Terry Tandeski; Will Heaton; Jake Strong; Cameron LeBaron; Jeff Zurawski; Isaac Erickson; Justin Bingham; Kevin Foley

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Locally Delivered Mesenchymal Stem Cell Homing Enables Intervertebral Disc Repair: A Proof-of-Concept Study

Jordy Schol; Daisuke Sakai; Warita Takayuki; Marianna Peroglio; Zhen Li; Sebastian Wangler; Stephan Zeiter; Sibylle Grad; Mauro Alini

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Microarray Profiling Of Mrnas And Long Noncoding RNAs In The Regeneration Of Degenerative Nucleus Pulposus Cells
Zhihua Han; Liang Gao; Qiugen Wang; Jianhong Wu

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Intradiscal Injection Is Only Effective With Small Needle Sizes And Injection Volumes
Lara J. Varden; Arthur J. Michalek

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Link N Interacts With Interleukin-1 β To Modulate Its Biological Effects On Intervertebral Disc Cells
Michael Grant; Laura Epure; John Antoniou; Fackson Mwale

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Chronic Opioid Usage Influences Outcomes After Lumbar Fusion In Patients With Degenerative Pathology
Mahir Qureshi; Andrew DiMatteo; Dhruv Goyal; Hayden Sonnier; Matthew Galetta; Srikanth Divi; Taolin Fang; Kristen Nicholson; David Kaye; Mark Kurd; Barrett Woods; Kris Radcliff; Jeffery Rihn; Greg Anderson; Alan Hilibrand; Christopher Kepler; Alexander Vaccaro;

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The Geometry Of The Medial Tibial Plateau As A Risk Factor For Medial Meniscus Posterior Root Tear
Yuki Okazaki; Takayuki Furumatsu; Shinichi Miyazawa; Shin Masuda; Yoshiki Okazaki; Takaaki Hiranaka; Toshifumi Ozaki

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Serum And Urine Biomarkers Can Distinguish Extent Of Articular Cartilage Pathology In Patients Undergoing Osteochondral Allograft Transplantation Surgery
Aaron M. Stoker; John R. Baumann; Emily V. Leary; Ishita Patel; James P. Stannard; James L. Cook

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3D MRI Analysis For Cartilage In Anterior Cruciate Ligament Deficient Knee
Nobutake Ozeki; Hideyuki Koga; Hayato Aoki; Akinobu Hyodo; Hiroki Katagiri; Yusuke Nakagawa; Yuji Kohno; Mitsuru Mizuno; Hisako Katano; Kenji Suzuki; Jun Masumoto; Ichiro Sekiya

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The Unique Anatomical Feature Of Discoid Lateral Meniscus In 3D MRI
Akionri Nekomoto; Masakazu Ishikawa; Narumi Kotaka; Yasuteru Shimamura; Naoyuki Kitamura; Norifumi Suga; Goki Kamei; Takenori Omoto; Toshiya Kano; Kyohei Nakata; Atsuo Nakamae; Nobuo Adachi

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Spatial-temporal Gait Parameter Prediction Using Deep Learning And Imu Sensors In OA And TKA Patients
Mohsen Sharifi Renani; Casey Myers; Chadd Clary

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Learning Times And Segmentation Accuracy Of U-net Convolutional Neural Networks On Automatic Segmentation For MRI Of Knee
Hayato Aoki; Nobutake Ozeki; Akinobu Hyodo; Yuji Kohno; Mitsuru Mizuno; Koji Otabe; Hisako Katano; Kenji Suzuki; Jun Masumoto; Hideyuki Koga; Ichiro Sekiya

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Novel Characterization Of The Stromal Cell And Immune Cell Microenvironment In Arthrofibrosis From Revision Total Knee Arthroplasty Patients
Afton K. Limberg; Christopher G. Salib; Meagan E. Tibbo; Juan S. Vargas; Jacob W. Bettencourt; Banu Bayram; Anthony G. Jay; Daniel J. Berry; Joaquin Sanchez-Sotelo; Mark E. Morrey; Brad Bolon; Jodi M. Carter; Andre J. van Wijnen; Matthew P. Abdel

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4 Aminopyridine (4-ap) As A Promising Single-dose Diagnostic Agent To Differentiate Axonal Continuity In Nerve Injuries
Anagha A. Gurjar; Kristen Manto; Juan A. Estrada; Marc Kaufman; M. A. Hassan Talukder; John Elfar

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Age-Dependent Changes In Femoral Condyles And Tibial Plateau Morphology During Skeletal Growth And Maturation Are Different Between Males And Females
Shayan Hosseinzadeh; Martha M. Murray; Ata M. Kiapour

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A Superior Technique For Semi-quantitative Western Blot Analysis Of Rabbit Knee Posterior Capsular Tissue
Jacob W. Bettencourt; Alex R. McLaury; Afton K. Limberg; Juan S. Vargas; Banu Bayram; Aaron R. Owen; Daniel J. Berry; Joaquin Sanchez-Sotelo; Mark E. Morrey; Andre J. van Wijnen; Matthew P. Abdel

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The Characterisation Of Monocyte Responses To Mediators Released From Periprosthetic Tissues Following Arthroplasty Surgery For Osteoarthritis

Kamarul T; Krishnamurthy Genasan; Margaret M. Roebuck; Valentina Barrera; Amanda Wood; Jesus Reine; Azhar Mahmood Merican; Murali MR; Azura Mansor; Simon P. Frostick

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Trends In Obesity And Metabolic Syndrome (mets) In Patients Undergoing Total Knee Arthroplasty (tka) From 2006 To 2017: Impact On 30-day Outcomes And Length Of Stay

David H. Campbell; Lauren L. Nowak; Melanie MacNevin; Michael D. McKee; Emil H. Schemitsch



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Longitudinal Changes In Lower Limb Joint Loading Up To Two Years Following Tibial Plateau Fracture

Stuart Millar; Kieran Bennett; Francois Fraysse; John B. Arnold; Lucian B. Solomon; Dominic Thewlis

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Vibration-induced Hamstrings Fatigue Reduces Muscle Inhibition Of The Quadriceps And Co-activation Of Knee Muscles For Individuals With Anterior Cruciate Ligament Reconstruction

Shiqi Yu; Timothy Lowe; Lisa Griffin; Xuanliang N. Dong

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Using Load-sensing Insoles To Identify Knee Kinetic Asymmetries During Landing In Patients With An ACL Reconstruction

Robin M. Queen; Alex T. Peebles; Kevin R. Ford; Joseph M. Hart

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Factors Associated With A 2nd Opioid Prescription Fill In Total Knee Arthroplasty

Kelsey Wise; Dylan McCreary; Patrick Horst; David Ring; Karl Koenig; Brian Cunningham; Harsh Parikh

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Development Of OA Following ACL Reconstruction: Unexpected Finding In Medial Versus Lateral Meniscus Pathology

Kevin D. Plancher; Karen Briggs; Stephanie C. Petterson

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Interstitial Fluid Pressure Fields During Negative Pressure Therapy (NPT) Applied To Intact Skin: Implications For Seroma & Hematoma Management Following Knee Surgery

Bala Haridas; Kris Kieswetter

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A Biomechanical And Radiological Evaluation Of Medial Collateral Ligament Repair Using Suture Anchor In A Large Animal Model

Tsuneari Takahashi; Shuji Hishikawa; Takuya Ito; Kaori Igarashi; Katsushi Takeshita

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Outcomes Of Tourniquet Vs Tourniquet-less Revision Total Knee Arthroplasty

Paul Walker; Venkatsaikhil Tirumala; Christian Klem; Ruben Oganessian; Janna van den Kieboom; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Young-Min Kwon

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The Effects Of ACL Reconstruction On Knee Biomechanics Three Months After Surgery

Kelsey A. Neal; Jack R. Williams; Naoaki Ito; Jacob J. Capin; Ashutosh Khandha; Kurt Manal; Lynn Snyder-Mackler; Thomas S. Buchanan

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Clinically Relevant Non-injurious Impact Conditions Lead To Higher Pressure On The Lateral Tibial Cartilage: A Dynamic Finite Element Study

Deniz Erbulut; Sara Sadeqi; Rodney Summers; Vijay Goel

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Knee—Structure, Function and Mechanics



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The Effect Of Different Anterolateral Procedures In Combination With An ACL Reconstruction On The Envelope Of Knee Motion

Danè Dabirrahmani; Thomas Neri; Joseph Cadman; Samuel Grasso; Aaron Beach; David Parker; Richard Appleyard

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Characterizing Abnormalities In Dynamic Quadriceps' Function Following Anterior Cruciate Ligament Reconstruction

Steven M. Davi; Ross J. Brancati; Lindsey K. Lepley

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Tibiofemoral Gap In Women Is Unaffected By Load During Military Load Carriage Tasks

Camille C. Johnson; Ajinkya Rai; Dennis Dever; Kellen Krajewski; William J. Anderst; Christopher Connaboy

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Mild Exercise Expedites Restoration Of Synovial Fluid Homeostasis Through Increased Lymphatic Clearance

Jarred Kaiser; Fabrice Benard; Sarvna Raval; Brandon Dixon; Nick J. Willett

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Biomechanical Investigation Of The Rotational-shortened Operation On The Collateral Ligament Of The Knee

Peter Andreas Timotius; Ming Chou Ku; Yen Nien Chen; Tai Hua Yang

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Effects Of Component Placement And Balancing In Total Knee Surgery

Gabriela Zapata; Inigo Sanz-Pena; Matthias Verstraete; Patrick Meere; Peter S. Walker

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Medial Shift Of Foot Center Of Pressure Correlates To Knee Adduction Moment Reduction

Jessica L. Asay; Jennifer C. Erhart-Hledik; Gordhan B. Mahtani; Thomas P. Andriacchi; Constance R. Chu

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Utilizing Forward Dynamics Modeling Methodology To Evaluate Knee Hinge Design

Amitkumar M. Mane; Brad Meccia; Milad Khasian; Richard Komistek; Mark Heldreth

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Morphological Analysis Of Femoral Implant Fit In Partial Knee Arthroplasty

Yifei Dai; Andrew Jensen; Andrea Gardner

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Comparison Of Severity Of Frontal Plane Functional Deficits In Affected Joints Between TKA And THA Candidates

Kharma Foucher; Janie Wilson

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Similitude Of Cement-bone Micromechanics In Cemented Rat And Human Knee Replacement

Kenneth A. Mann; Mark Miller; Megan E. Tatusko; Megan Elizabeth Oest

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Constructing A Library Of Subject-specific Knee Models Credible For Implant Design And Alignment Evaluations

Azhar A. Ali; Ken Trimmer; Xiangyi (Cheryl) Liu

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Evaluation Of A Novel Sensor To Detect Overly Tight Collateral Ligaments During Total Knee Arthroplasty

Joshua D. Roth; Jonathon L. Blank; Rahul G. Samtani; Justin J. Greiner; Matthew W. Squire; Darryl G. Thelen

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In Vivo Kinematics And Ligamentous Function Of The Knee During Weight-bearing Flexion—An Investigation On Mid-range Flexion Of The Knee

Zhitao Rao; Chaochao Zhou; Willem Kernkamp; Timothy Foster; Hany Bedair; Guoan Li

Poster No. 1052

In-vivo Kinematic Analysis Of The Knee With Anterior Cruciate Ligament Double-bundle And Anterolateral Ligament Functional Reconstruction

Jiebo Chen; Cong Wang; Jiayu Qiu; Caiqi Xu; Tsung-Yuan Tsai; Jinzhong Zhao

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Evaluation Of Fixation Stability According To Spike Positions Of Cementless Total Knee Replacement

Jin Ju Jang; Seok Ju Kim; Jung Sung Kim; Dohyung Lim

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Contribution Of Medial Ligaments To The Rotational Stability Of PCL-deficient Knees

Alireza Moslemian; Philip Peter Roessler; Alan Getgood; Ryan Willing

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Role Of Ligamentous Restraints During Anterior-Posterior Drawer Tests Of The Murine Knee

Snehal S. Shetye; John S. Bova; Andrew F. Kuntz; Miltiadis H. Zgonis; David L. Butler; Nathaniel A. Dymont

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Anatomical Characteristics Of Patellar Instability Using 3D Bone Shape Modeling With MRI

John J. Elias; Mingrui Yang; Kerrin Sunshine; Joseph Lee; Ceylan Colak; Carl Winalski; Kerwyn C. Jones; Lutul D. Farrow; Xiaojuan Li

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Biomechanical Testing Of 3D-printed Dysplastic Patellofemoral Joints: Assessing Impact On Patellofemoral Contact Pressure And Kinematics

Amirhossein Jahandar; Robert Spang; Amanda Wach; Kathleen Meyers; Suzanne Maher; Sabrina Strickland

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Experimental Method And Computational Model For Evaluation Of Knee Joint Mechanics

Yashar A. Behnam; Ahilan Anantha Krishnan; Chadd Clary

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Knee Reaction Sensitivity To Properties Of Clinically Relevant Ligaments—Application Of Distraction Based Models

Jason Halloran; MhD Ammar Hafez; William Zaylor; Xiangyi (Cheryl) Liu; Azhar Ali

Poster No. 1060

Risk Of Popliteal Artery Injury During High Tibial And Distal Tuberosity Osteotomy. An Analysis With Contrast Enhanced Computed Tomography

Akiyoshi Mori

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Poster No. 1061—Guest Nation

OA Vs. Non-OA Tibiae: Influence Of Joint Alignment On Cartilage, Cortical Subchondral Bone Plate And Trabecular Bone

Sophie K. Rapagna; Bryant C. Roberts; Lucian Solomon; Karen J. Reynolds; Dominic Thewlis; Egon Perilli

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Influence Of High Tibial Osteotomy On The Center Of Axial Rotation Of The Knee Joint

Keiji Ohmori; Yasumitsu Ohkoshi; Kengo Ukishiro; Kou Suzuki; Kensaku Kawakami; Sho'ji Suzuki; Takahiro Inoue; Shigeyuki Sakurai; Kouta Miura; Tatsunori Maeda; Yuki Suzuki; Koji Iwasaki; Tomohiro Onodera; Eiji Kondou; Norimasa Iwasaki

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Flexion Space Balance Using Trochlear Matching For Setting Femoral Component Rotation And Its Relationship To Traditional Femoral Rotational Landmarks In Robotic Assisted Total Knee Arthroplasty

Trevor Staub; Jeffrey Jancuska; Andrew Lee; Michael Cobler-Lichter; Keely Boyle; Scott Nodzo

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Center Of Axial Rotation Of Medial Pivot Type Total Knee Arthroplasty

Kota Miura; Yasumitsu Ohkoshi; Kou Suzuki; Tatsunori Maeda; Kengo Ukishiro; Shigeyuki Sakurai; Kensaku Kawakami; Sho'ji Suzuki; Tomohiro Onodera; Koji Iwasaki; Eiji Kondo; Norimasa Iwasaki

Poster No. 1065

Changes In Relative Contributions Of Each Moment Components At The Knee After Medial Open Wedged High Tibial Osteotomy

Yuki Suzuki; Yasumitsu Ohkoshi; Tomohiro Onodera; Kou Suzuki; Tatsunori Maeda; Kengo Ukishiro; Shigeyuki Sakurai; Kensaku Kawakami; Shoji Suzuki; Koji Iwasaki; Eiji Kondo; Norimasa Iwasaki

Poster No. 1066

Preoperative Severe Rotational Instability In Anterior Cruciate Ligament Injured Knee Lead To Postoperative Residual Instability -evaluation At Preoperation, Time Zero, And More Than 1 Year Postoperation-

Yusuke Kawanishi; Masahiro Nozaki; Makoto Kobayashi; Sanshiro Yasuma; Hiroaki Fukushima; Tetsuya Takenaga; Yohei Kawaguchi; Yuko Nagaya; Hideki Murakami

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Analysis Of Ground Reaction Force Passing Point On The Proximal Tibial Surface

Takahiro Inoue; Yasumitsu Ohkoshi; Kensaku Kawakami; Koji Iwasaki; Sho'ji Suzuki; Kengo Ukishiro; Shigeyuki Sakurai; Keiji Ohmori; Takumi Ino; Tatsunori Maeda; Kou Suzuki; Yuki Suzuki; Tomohiro Onodera; Eiji Kondou; Norimasa Iwasaki

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The Influence Of Focal Knee Articular Implant Mechanical Properties On The Human Knee Joint Using Computational Simulation

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People With Femoroacetabular Impingement Syndrome Demonstrate Less Frontal And Transverse Plane Pelvic Range Of Motion During A Single-leg Squat Task Than Healthy Controls

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Rongshan Cheng; Lanhong Yao; Kerong Dai; Liao Wang; Tsung-Yuan Tsai

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Frontal And Transverse Plane Movement Pattern Features At The Hip Joint Differ Between People With Femoroacetabular Impingement Syndrome And Healthy Controls During A Single-leg Squat Task

Philip Malloy; Alejandro A. Espinoza Orias; Daniel Wichman; Kyleen Jan; Jorge Chahla; Shane J. Nho

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Conventional Technique Versus Portable, Accelerometer-based Hip Navigation For Acetabular Cup Placement

Hiromasa Tanino; Yasuhiro Nishida; Ryo Mitsutake; Hiroshi Ito

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Robotic Assisted THA Performed By Surgeons In Fellowship Training Leads To Improved Accuracy And Precision To Plan

Ilya Borukhov; Laura Scholl; Emily Hampp; Ryan Smith; Zachary Byrd

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Decreasing Length Of Stay And Complication Rates In Robotic-Assisted THA In The NSQIP Database: An Analysis Of 2010-2017

Jeremy S. Frederick; Anastasia Gazgalis; Thomas R. Hickernell; Jeffrey A. Geller; H. John Cooper; Roshan P. Shah; Alexander L. Neuwirth



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Optimal Positioning Of The Hip Joint Center In Total Hip Arthroplasty: Effects On Hip Abductor Muscle And Joint Contact

Jasvir S. Bahl; John B. Arnold; Mark Taylor; Lucian B. Solomon; Dominic Thewlis

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Luke Garbarino; Peter Gold; Hiba Anis; Nipun Sodhi; Joshua Burshtein; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Michael Mont

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Ryo Mitsutake; Hiromasa Tanino; Yasuhiro Nishida; Hiroshi Ito

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Brendan Cotter

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Tomoyuki Kamenaga; Shinya Hayashi; Shingo Hashimoto; Yoshinori Takashima; Masanori Tsubosaka; Koji Fukuda; Koji Takayama; Tomoyuki Matsumoto; Ryosuke Kuroda

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Shouchen Dun; Dustin Whitaker; Michael Saloka

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Carl L. Herndon; Josephine Coury; Nana O. Sarpong; Thomas R. Hickernell; Alexander L. Neuwirth; Jeffrey A. Geller; Roshan P. Shah; H. John Cooper

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Masatoshi Oba; Choe Hyonmin; Taro Tezuka; Yushi Miyamae; Akira Morita; Koki Abe; Yutaka Inaba

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Sunhyung Lee; Jeong Joon Yoo; Hee Joong Kim

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Jonathan A. Gustafson; Robin Pourzal; Joshua J. Jacobs; Brett R. Levine; Hannah J. Lundberg

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Ravi Vaswani; Andrew Sheehan; Gregory Gasbarro; Christopher Como; Kevin Kohut; Andrew Wilmot; Camilo Borrero; Dharmesh Vyas; Albert Lin

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Laura K. Moore; Lauren Bertoy; Carlin S. Lee; Mengyao Liu; He Zhang; Alan Dang; Alexis Dang; Brian Feeley; Xuhui Liu

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Achilles Tendon Loading In An Immobilizing Boot Is Dependent On Ankle Angle And Walking Speed

Todd J. Hullfish; Kathryn M. O'Connor; Josh Baxter

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Melissa R. Requist; L. Daniel Latt

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Devarshi Rastogi; Mukesh Kumar Dwivedi; Rajeshwar Nath Srivastava

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Makoto Kobayashi; Masahiro Nozaki; Yusuke Kawanishi; Fukushima Hiroaki; Tetsuya Takenaga; Masahito Yoshida; Yuko Nagaya; Nobuyuki Watanabe; Hideki Murakami

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The Risk Factors Associated With Failure Of Revision Surgery In Acute Periprosthetic Joint Infection

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Christian Klemm; Venkatsaiakhil Tirumala; Wittawat Boonyanuwat; Wenhao Chen; Liang Xiong; Young-Min Kwon

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Stephanie N. Moore-Lotridge; Children's Orthopaedic Trauma and Infection Consortium for Evidence Based Study (CORTICES) Group; Jonathan G. Schoenecker

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Uweh; Cristina Villalpando; Nicolas Cevallos; Doug Dang; Alexandra
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Osteocytes Regulate Breast Cancer Cell Metastasis Via A Primary Cilia
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Identification Of Novel Therapeutic Targets For Metastatic Osteosarcoma
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Yusuke Kawabata; Michiaki Suzuki; Ikuma Kato; Kenta Hayashida; Masanobu Takeyama; Yutaka Inaba

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Opioid Use In Orthopaedic Oncology Patients

Sheena J. Amin; Alec S. Kellish; David Le; John P. Gaughan; Tae Won B. Kim; Christina J. Gutowski

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Imaging Characteristics Of Lipomatous Tumors -distinction Of Lipoma, Well-differentiated Liposarcoma And Malignant Lipomatous Tumors-Akira Shiga;; Yusuke Kawabata; Kenta Hayashida; Ikuma Kato; Michiaki Suzuki; Masanobu Takeyama; Yutaka Inaba

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Shunichi Toki; Tetsuro Yoshimaru; Hitoshi Aibara; Yosuke Matsushita; Koichi Saiyo; Toyomasa Katagiri

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Takayuki Nakayama; Seiichi Matsumoto; Keisuke Ae; Taisuke Tanizawa; Yuki Funauchi; Keiko Hayakawa; Yusuke Minami; Masanori Saito; Yoshiro Musha; Hiroyasu Ikegami; Takao Kaneko; Yasuyo Teramura; Yukari Yamazaki; Takuro Nakamura

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Kenta Hayashida; Yusuke Kawabata; Ikuma Kato; Kosuke Matsuo; Takayuki Kamiishi; Yutaka Nezu; Masanobu Takeyama; Yutaka Inaba

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Tetsuya Ogawa; Shusa Ohshika; Ayako Sasaki; Hiroya Ono; Yasuyuki Ishibashi; Katsuya Yamada

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Kazumichi Kitayama; Teruya Kawamoto; Hitomi Hara; Naomasa Fukase; Yohei Kawakami; Toshiyuki Takemori; Shuichi Fujiwara; Shunsuke Yahiro; Ryosuke Kuroda; Toshihiro Akisue

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Sean W. Dooley; Ruichen Ma; Kurt R. Weiss; Rebecca Watters

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Oxygen Tension Mediates Proliferation Of Osteosarcoma Cells In 3-Dimensional Culture

Victoria Thai; Katherine H. Griffin; Steven Thorpe; R. Lor Randall; J. Kent Leach

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Expression Of IMP3 Is Upregulated In Intradural-extramedullary Schwannomas

Hirofumi Bekki; Katsumi Harimaya; Yoshihiro Matsumoto; Masato Yoshimoto; Hidetaka Yamamoto; Yoshinao Oda; Yasuharu Nakashima

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Taisei Kurihara; Yoshiyuki Suehara; Kei Sano; Keisuke Akaike; Takuo Hayashi; Nobuhiko Hasegawa; Tatsuya Takagi; Taketo Okubo; Takashi Yao; Kazuo Kaneko; Tsuyoshi Saito

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Nikhil Jain; Lawal Labaran; Frank Phillips; Safdar Khan; Amit Jain; Khaled Kebaish; Hamid Hassanzadeh

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Machine Learning Modeling For Predicting Complications Following Total Hip Arthroplasty: The Importance Of Perioperative Considerations

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Creating A Novel Fracture Research Animal Models Database

Carl Alastair Kirker-Head; Abby Brisbois; Ama Darkwa;
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Chase Ryan Maag; Jason Langhorn; Paul Rullkoetter

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Seasonality Independently Increasing Risk Of Superficial Surgical Site
Infections Following Primary Total Hip Arthroplasty

Bradley Glazier; Michael J. Patetta; Anshum Sood; Awais Hussain;
Donald Chuang; Hristo Pisonov; Mark Gonzalez

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Gradient Boosted Machine Learning Modeling For 30-day Mortality
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Daniel S. Yang; Eric M. Cohen; Alan H. Daniels

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Michael J. Patetta; Kristina M. Pond; Elizabeth M. Tennant; Anshum Sood;
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Jordan R. Pollock; Michael L. Moore; Jack M. Haglin; Joshua S. Bingham

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Ashley Bee Anderson; Scott M. Tintle; Benjamin K. Potter;
Jonathan A. Forsberg; Jonathan F. Dickens

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Sean Karott; Christopher P. Morley; Timothy A. Damron

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Joshua Martin Tublin; Albert Lin

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Joel J. Gagnier; Jianyu Lai

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Umito Kuwashima; Masafumi Itoh; Junya Itou; Ken Okazaki

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International Randomized Controlled Trial: Completion Of Enrollment And
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Michelle Ghert; The PARITY Investigators

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Elizabeth L. Yanik; Jay D. Keener; Ann Marie Dale; Graham A. Colditz;
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Underweight Patients Have Higher Complication Rates After Total Hip Or
Knee Arthroplasty Than Morbidly Obese Patients

Alexander Scott Kuczmarski; Neill Y. Li; Nicholas J. Lemme;
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Joint Arthroplasty, Physical Function, And Fear Of Falling: A Comparison
Of Older Adults

Breanne S. Baker; Kelsey Weitzel; Kristin Miller; Stephen D. Ball;
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Lower Limb Arterial Calcification Is A Risk Factor Of Bilateral Joint Severe
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Shigeo Yoshida; Kohei Nishitani; Hiromu Ito; Motoo Saitoh; Yugo Morita;
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Surgical Treatment Of Metastatic Spine Disease: National Trends And
Clinical Outcomes From 2010-2014

Benjamin V. Kelley; Peter P. Hsiue; Clark J. Chen; Alexandra I. Stavrakis;
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Eric L. Smith; Sung-Jun Son; Akash Shah; Ruijia Niu; Muzna Ali; Ayesha Abdeen; Thea M. Miller; Carl T. Talmo; Santiago Lozano-Calderon; Hany S. Bedair

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Ali S. Noorzad; Matthew Bloom; Sam Torbati; Carol Lin; Milton T.M. Little

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Hiroaki Manabe; Toshinori Sakai; Yasuyuki Omichi; Kosuke Sugiura; Yoshihiro Ishihama; Fumitake Tezuka; Kazuta Yamashita; Yoichiro Takata; Koichi Sairyo

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Akinobu Nishimura; Yukie Kitaura; Yoshiyuki Senga; Naoya Ito; Akihiro Sudo

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Stephanie Kleine; Robert Gogal; Thomas Krunkosky; Sherry Sanderson; Clint George; Megan Norton; Steven Budsberg

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Hideaki Fukuda

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The Majority Of Postoperative Opioid Prescriptions Are From Non-Orthopedists: 12-Month Follow Up Of Total Joint Arthroplasty Patients

Austin Kaidi; Akshay Lakra; Emma Jennings; Roshan P. Shah; Jeffrey A. Geller; Alexander L. Neuwirth; H. John Cooper; Thomas Hickernell

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Chronic Opioid Users Consume Significantly More Opioids Than Opioid-Naive Patients: 12-Month Follow Up Of Total Joint Arthroplasty Patients

Austin Kaidi; Akshay Lakra; Emma Jennings; Roshan P. Shah; Alexander Neuwirth; Jeffrey A. Geller; H. John Cooper; Thomas R. Hickernell

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Naudereh Noori; Lee Haruno; Ian Schroeder; Mark Vrahas; Milton Little; Charles Moon; Carol Lin

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Goro Watanabe; Kenji Hoshi; Yasuo Kurose; Kazuyoshi Gamada

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Peter A. Gold; Luke J. Garbarino; Hiba K. Anis; Nipun Sodhi; Sean Matuszak; Sean Matuszak; Jonathan Danoff; Sreevaths Boraiah; Vijay J. Rasquinha; Michael A. Mont

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Robert Marchand; Kevin Marchand; Kelly Taylor; Caitlin Condrey; Laura Scholl; Manoshi Bhowmik-Stoker

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Tae Won B. Kim; Sandra Miskiel; Christina J. Gutowski

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Risk Factors For High Narcotic Demands In Trauma Activated Patients
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Ansab Khwaja; Peter Du; Greg DeSilva

Poster No. 1407

What To Expect In Outcomes Of “Challenging” Patients With Computer-assisted Total Knee Arthroplasty?
Yifei Dai; Qunjun Cui; Michael P. Bolognesi; Samuel S. Wellman; Thorsten Seyler; Yassaman Najmabadi; David Liu

Poster No. 1408

Does Longer Operative Time Affect The Ability For Patients To Recover Faster After Total Knee Arthroplasty?
Peter Gold; Luke Garbarino; Hiba Anis; Alanna Carcich; Eric Grossman; Nipun Sodhi; Michael J. Sayegh; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Stanley Asnis; Michael Mont

Monday, February 10—Tuesday, February 11, 2020

Poster Session 2

The following posters will be displayed Monday, February 10 and Tuesday, February 11.

PS2-062 Biomaterials

Poster No. 1409

Porous Asymmetrical Beaded Coating Bone Ingrowth Evaluation Using An Ovine Bilateral Long Bone Model

Michel Assad; Sandra Iacampo; Madeleine Chagnon; Yannick Trudel; Shilesh Jani; Brody Nelson; Stan Despres

Poster No. 1410

Effect Of Porosity Of The Functional Graded Scaffold For Treatment Of steroid-associated Osteonecrosis Of The Femoral Head In Rabbits
Masahiro Maruyama; Chi-Chun Pan; Seyedsina Moeinzadeh; Elaine Lui; Hunter Storaci; Tzuhua Dennis Lin; Chi-Wen Lo; Monica Romero Lopez; Masaya Ueno; Takeshi Utsunomiya; Ning Zhang; Zhenyu Yao; Tahsin N. Khan; Claire Rhee; michiaki Takagi; Stuart B. Goodman; Yunzhi Peter Yang

Poster No. 1411

Withdrawn

Poster No. 1412

Cartilage Tissue Engineering With Viscoelastic Hydrogels And Pre-aggregated Chondrocytes

João F. Crispim; Ellen A.M. van Rooij; Keita Ito

Poster No. 1413

Withdrawn

Poster No. 1414

Mechanical Advantages Of Double Network PVA Hydrogels For Articular Cartilage Replacement

David James Broughton; Casey Young; Aaron Vaughn

Poster No. 1415

Sustained Release Of Pain-Relieving Drugs From Biodegradable Gels

Ebru Oral; Shannon Hugard; Scott Grindy; Orhun Muratoglu; Kyle Moore

Poster No. 1416

Bone Marrow Aspirate Concentrate Enhances The Regenerative Potential Of A Bioengineered Anterior Cruciate Ligament: A Rabbit ACL Reconstruction Model

Paulos Mengsteab; Takayoshi Otsuka; Patrick Conroy; Anessah McClinton; Nikoo Saveh-Shemshaki; Shiv Shah; Ho-Man Kan; Lakshmi Nair; Cato T. Laurencin



Poster No. 1417—Guest Nation

Bone Healing Using Two Novel Broad Spectrum Antimicrobial Coatings With Allograft

Xingdi C. Wang; Vedran Lovric; Renxun Chen; Naresh Kumar; Mark Willcox; Rema A. Oliver; William R. Walsh

Poster No. 1418

The Impact Of Diabetes On Implant Surface Characteristics: A Retrieval Study

Alexandra Arteaga; Jiayi Qu; Sarah Haynes; Brian Webb; Danieli Rodrigues

Poster No. 1419

Dual-Network Hydrogels With Complex Mechanical Properties For Nucleus Pulposus Replacement

Samantha L. Marshall; Nadeen O. Chahine

Poster No. 1420

Evaluation Of In Vivo Tissue Regeneration Of Decellularized Tendon In Ovine Anterior Cruciate Ligament Reconstruction

Masafumi Itoh; Kiyotaka Iwasaki; Ken Okazaki; Mitsuo Umezumi

Poster No. 1421

Temporal Regulation Of Non-canonical Wnts During Osteoblastic Differentiation On Ti-based Implants Produced By Machining And Direct Metal Laser Sintering

Michael B. Berger; Kyla Bosh; Thomas W. Jacobs; Barbara D. Boyan; Zvi Schwartz

Poster No. 1422

Increasing Multilineage Potential Of Stem Cell Spheroids By Loading With Cell-secreted Extracellular Matrix

Tomas Gonzalez Fernandez; Alejandro Tenorio; Andrew T. Keown; J. Kent Leach

Poster No. 1423

Prediction Of Anisotropic Mechanical Properties For Additively Manufactured Titanium Lattice Structures

Maxwell J. Munford; Umar A. Hossain; Jonathan R. T. Jeffers

Poster No. 1424

Micro-ct Based Gap Filling Analysis Of Nano-hydroxyapatite Coated Ti-6Al-4v In A Rabbit Model

Ryota Watanabe; Hiroyuki Takahashi; Keita Uetsuki; Toru Uemukai; Yasumichi Kogai

Poster No. 1425

Optimal Concentration Of Vitamin E In Prosthetic Components For Minimal Biological Response Of Wear Debris

Hiroaki Kida; Mohamad Alaa Terkawi; Gen Matsumae; Taku Ebata; Yuan Tian; Heng Alhasan; Daisuke Takahashi; Keita Uetsuki; Norimasa Iwasaki

Poster No. 1426

A Comparison Of Platelet-rich Plasma Angiogenic And Fibrotic Factor Concentrations In Healthy And Anterior Cruciate Ligament Injured Patients

Verena Oberlohr; Sara Robinson; Kaitie E. Whitney; Grant Dornan; Thos A. Evans; Johnny Huard



Poster No. 1427 – Guest Nation

Orthoss[®] Substituted Hydroxyapatite Bone Graft Substitute In A Rabbit Posterolateral Spinal Fusion

Rema A. Oliver; James Crowley; Dan Wills; Tian Wang; Michael Dan; John Ward; Daniel Pasqualino; William R. Walsh

Poster No. 1428

Mechanical Properties Of 3D Printed Orthopaedic Internal Fixation Implants

Connor P. Lough; Samuel D. Gieg; Will A. Bezold; Kevin P. Feltz; Kevin M. Middleton; Nathan Wm Skelley

Poster No. 1429

Quantum Dots-labeled Polymeric Scaffolds For In Vivo Tracking Of Degradation And Tissue Formation

Kun H. Sim; Arna Choksi; David Xiang; David Xiang; Robert Stanciu; Seyed M. Mir; Solaiman Tarafder; Jinho Kim; Chang H. Lee

Poster No. 1430

Does Femoral Head Composition Affect Fretting And Corrosion In Retrieved Total Hip Arthroplasty Implants?

Erin A. Baker; Corinn K. Gehrke; Young M. Jee; Matthew P. Siljander; Maria A. Lepore; Michael A. Flierl; Drew D. Moore

Poster No. 1431

3D Printed PCL/PLGA/HA Scaffold Enhances Bone Regeneration In Large Critical-sized Calvarial Defect

Adil Akkouch; Liu Hong; Mason Sweat; Brad Amendt; Aliasger Salem

Poster No. 1432

Biomechanical And Radiographic In Vivo Performance Of Nanocrystalline Hydroxylapatite Bone Graft Substitute Putty In Rabbit Posterolateral Spine Arthrodesis Model

Nathan R. Hendrickson; Christina J. Hajewski; Cassim Igram; Douglas C. Fredericks

Poster No. 1433

3D Printing Of Bilineage Constructive Biomaterials For Bone And Cartilage Regeneration

Yufeng Wang; Qingqiang Yao; Jiayi Li; Liming Wang; Chengtie Wu; Huikang Zhang; Chen Ling

Poster No. 1434

Fretting Corrosion Debris Analysis Of CoCrMo Alloy In Physiological Phosphate Buffered Saline

DongKai Zhu; Yangping Liu; Jeremy L. Gilbert

Poster No. 1435

Improving Iso 7206-12 For Acetabular Shell Testing

Daniel Wiznia; Brian Beitler; Steven M. Tommasini

Poster No. 1436

Novel Bio-scaffolds Janus Base Nano-matrix For Mesenchymal Stem Cell Homing

Libo Zhou; Anne Yau; Hongchuan Yu; Liisa Kuhn; Wei Guo; Yupeng Chen

Poster No. 1437

3D Printing Of Functional Structural Scaffolds For Tissue Engineering Of Articular Cartilage

Mahmoud Amr; Alia Mallah; Haneen Abusharkh; Arda Gozen; Juana Mendenhall; Bernard Van Wie; Nehal Abu-Lail

Poster No. 1438

Fabricating Scaffolds With Gradients In Fiber Alignment And Chemistry For Interfacial Tissue Repair

R. Kevin Tindell; Grace Schwarz; Julianne L. Holloway

Poster No. 1439

Quantitative Evaluation Of Distal Radioulnar Joint Instability Using A Three-dimensional Electromagnetic Sensor

Shintaro Mukohara; Yutaka Mifune; Atsuyuki Inui; Hanako Nishimoto; Takashi Kurosawa; Kohei Yamaura; Kohei Yamaura; Tomoya Yoshikawa; Kouki Nagamune; Ryosuke Kuroda

Poster No. 1440

Resorbable Polymer Ceramic Composite Biomimetic Scaffolds Support Osteoblastic Differentiation Of Stem Cells

Efren Barron Villalobos; Luis F. Arciniaga; Vishakk Rajendran; David A. Gonzales; Douglas A. Loy; John A. Szivek; David S. Margolis

Poster No. 1441

Porous Titanium Beta-tricalcium Phosphate Hybrid Scaffolds By Additive Manufacturing For Orthopaedic Applications

JiaPing Li; Pamela Habibovic; Lorenzo Moroni

Poster No. 1442

Withdrawn

Poster No. 1443

Bupivacaine-eluting Polyethylene As An Alternative To Systemic Opioid After Total Knee Arthroplasty

Charlotte P. Leape; Yingfang Fan; Wali A. Sabuhi; Orhun K. Muratoglu; Jamie Collins; Mark A. Randolph; Ebru Oral



Poster No. 1444 – Guest Nation

The Mechanical Properties And Density Of Dihydropyrrone (dhp) Impregnated Bone Cement: A Pilot In Vitro Study

Chun K. Loh; Mitchell Murray; Vedran Lovric; Andrew Leicester; Andrew Leicester; Matthew H. Pelletier; William R. Walsh

Poster No. 1445

The Influence Of Deformation During Polymerization On Residual Stresses And Tensile Strength In PMMA Bone Cements

Alexander T. Boote; Robert J. A. Bigsby; Philip J. Hyde; David J. Deehan; Kenneth S. Rankin; David S. Swailes

Poster No. 1446

An In Vitro Platform For Spatiotemporally Controlling Multiple Biomolecules Using DNA Handles

Fallon M. Fumasi; Tara MacCulloch; Nicholas Stephanopoulos; Julianne L. Holloway

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Poster No. 1447

Surface Morphology Characterization Of Retrieved Orthopedic Titanium Alloy And Stainless-Steel Implants

Jiayi Qu; Alexandra Arteaga; Brian Webb; Sarah Haynes; Danieli C. Rodrigues

Poster No. 1448

Gelatin/hydroxyapatite Microsphere Embedded Stromal Cell-derived Factor-1 For Bone Tissue Engineering

Chih-Hsiang Fang; Yi-Wen Lin; Jui-Sheng Sun

Poster No. 1449

Regional Dual Sustaining Release Growth Factors Biomimetic Trilayered Scaffold For Repair Of Large-scale Osteochondral Defects

Yunsheng Dong; Qiang Yang

Poster No. 1450

Tobramycin Infused InterSep Bone Void Filler Bead Dissolution In Vitro

Duran Yetkinler; Lyle Harada

PS2-063

Cartilage and Synovium—Diseases and Disorders

Poster No. 1451

Effect Of Sirtuin 5 On Chondrocyte Protein Lysine Malonylation And Cellular Metabolism

Shouan Zhu; Albert Batushansky; Dawid Makosa; Timothy M. Griffin

Poster No. 1452

Inflammatory Response Via Toll-like Receptor 3 In Human Rheumatoid Fibroblast-like Synoviocytes

Tatsuro Saruga; Tadaatsu Imaizumi; Norihiro Sasaki; Ryoko Uesato; Yasuyuki Ishibashi

Poster No. 1453

Fibrotic Changes Of Infrapatellar Fat Pad Induce New Vessel Formation And Sensory Nerve Fiber Endings That Cause Persistent Knee Pain

Hiroaki Onuma; Kunikazu Tsuji; Takashi Hoshino; Kei Inomata; Saisei An; Ichiro Sekiya; Takeshi Muneta; Hideyuki Koga

Poster No. 1454

Global Metabolomic Profile Of Human Joint Fluid Following A Second ACL Tear: A Case Study

Jenna M. Starke; Cameron Wallace; Ethan Viles; Hope Wellhaven; Ron June; Alyssa K. Hahn

Poster No. 1455

Withdrawn

Poster No. 1456

Correlations Among Metabolic Responses Of Articular Cartilage And The Underlying Subchondral Bone From Osteoarthritic Knees

Matthew Z. Gao; Aaron M. Stoker; Tyge J. Ortega; Hayley G. Ockerhausen; Muhammad H. Salim; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James L. Cook

Poster No. 1457

Cartilage Degeneration In The Femoral Head-neck Area In Patients With Symptomatic Acetabular Dysplasia And Concomitant Impingement Is Similar To Patients With Femoroacetabular Impingement

Masahiko Haneda; Muhammad Farooq Rai; Regis J. O'Keefe; Robert H. Brophy; John C. Clohisy; Cecilia Pascual-Garrido

Poster No. 1458

The Gene Expressions Of Various Key Molecules Are Influenced By Death Receptor 3 In Rheumatoid Synovial Fibroblasts

Koji Fukuda; Yasushi Miura; Shinya Hayashi; Toshihisa Maeda; Ryosuke Kuroda

Poster No. 1459

Mutation In Gpnmb Results In Age-related Degradation And Osteoarthritis

Isabelle H. Mawby; Giovanna R. Leone; Jad A. Saleh; Ernesto Solorzano Zepeda; Kevin Budge; Faye F. Safadi

Poster No. 1460

Targeting M6a Of S1p Signal Pathway Attenuates Osteoarthritis

Jianxi Zhu; Yusheng Li; Yihe Hu

Poster No. 1461

Isolation And Characterization Of Adipose-derived Stromal Stem Cells From Total Hip Replacement Using Enzymatic And Non-enzymatic Separation Methods: Preliminary Results

Eleonora Migliore; Erika Leonardi; Pier Francesco Indelli; Nicholas Giori; Constance R. Chu

Poster No. 1462

Administration Of A Pharmacologic Iron Chelator Reduces Development Of Cartilage Lesions And Maintains Mobility In The Dunkin-hartley Model Of Spontaneous Osteoarthritis

Lindsey H. Burton; Lauren B. Radakovich; Maryam F. Afzali; Margaret A. Campbell; Lauren A. Culver; Angela J. Marolf; Kelly S. Santangelo

Poster No. 1463

The Peptide Of Tenascin-c Promotes Chondrocyte Proliferation By Activating Integrin-fak-pi3k/akt Pathway

Yoshio Hattori; Masahiro Hasegawa; Tetsuya Hattori; Takahiro Iino; Fumio Fuka; Toshimichi Yoshida; Akihiro Sudo

Poster No. 1464

The Role Of Mitochondrial Oxidative Stress In The Development Of Age-related Osteoarthritis

Katie A. McDermott; Alexandra R. Armstrong; Cathy S. Carlson; Richard F. Loeser

Poster No. 1465

Fibronectin Fragment Stimulation As An In Vitro Model Of Chondrocyte Gene Expression In Osteoarthritis

Richard Loeser; Kathleen S. Reed; Cheeho Kim; Douglas H. Phanstiel

Poster No. 1466

Blockade Of Macrophage Surface Receptors Suppresses Inflammatory Response Triggered By Cartilage Fragments In Vitro

Masanari Hamasaki; Mohamed Alaa Terkawi; Tomohiro Onodera; Gen Matsumae; Yuan Tian; Hend Alhasan; Taku Ebata; Norimasa Iwasaki

Poster No. 1467

Maximizing Reproducibility Of Osteoarthritis Grading In Mice Through A Comparison Of Grading Schemes

Alexandra R. Armstrong; Richard F. Loeser; Aaron Rendahl; Cathy S. Carlson

Poster No. 1468

Dpp4 + Chondrocytes Have Senescent Phenotypes And Exacerbate Osteoarthritis.

Hyun Cheol Bae; Joonhee Lee; Haru Yang; Sung Hee Pyo; Sun Young Wang; Du Hyun Ro; Myung Chul Lee; Hyuk Soo Han

Poster No. 1469

Distribution Of Mitochondrial Haplotypes In A Sample Of Total Joint Replacement Patients

Ron June; William J. Schell; Paula R. Louro; Sara R. Fernandez; Francisco B. Garcia; Ignacio Rego-Perez

Poster No. 1470

Molecular Mechanisms Underlying The Regulation Of Proprotein Convertase Subtilisin/kexin Type 9 (pcsk9) And Janus Kinase 3 (jak3) By Transfer RNA Fragment Trf-3003a In Human Chondrocytes

Jonathan Alex Green; Mohammad Y. Ansari; Hope C. Ball; Kimberly M. Novak; Tariq Haqqi

Poster No. 1471

Intra-articular Injection Of IL36 α Induces OA-like Phenotype, Pain And Upregulated Pain-associated Gene Expression In DRG

Fang Fang; Tieshi Li; Xin Jin; Alessandra Esposito; Anna Spagnoli

Poster No. 1472

Contribution Of Calcified Cartilage To The Pathogenesis Of Osteoarthritis: Escalating Inflammation-associated Degeneration Through Nf κ B Signaling Way

Mingsheng Xie; Hui Li; Chao Zeng; Guanghua Lei; Hang Lin

Poster No. 1473

Inflamed Macrophages By Articular Cartilage Fragments Elicits Typical Gene Expression Signature Of Endochondral Ossification In Chondrocytes In Vitro

Taku Ebata; Alaa Terkawi; Masanari Hamasaki; Tomohiro Onodera; Gen Matsumae; Hiroaki Kida; Yuan Tian; Hend Alhasan; Daisuke Takahashi; Norimasa Iwasaki

PS2-064

Cartilage and Synovium – Growth, Development and Aging

Poster No. 1474

Mutation Of D289e/ S246/467/632a Of Hdac4 Promotes Chondrocyte Proliferation, Matrix Synthesis, And Inhibits Chondrocytes Hypertrophy Via Anchoring Hdac4 In Nuclei

Li Guo; Xiaojian Wang; Yang Zhang; Xiaochun Wei; Pengcui Li; Lei Wei

Poster No. 1475

Latent TGF- β Contents Of Synovial Joint Tissues

Nicholas J. Simone; Sedat Dogru; Michael B. Albro

Poster No. 1476

High-Fat Diet Accelerates Bone Elongation And Increases IGF-I Activity In Growth Plates Before The Onset Of Obesity

Maria A. Serrat; Allison L. Machnicki; Cassaundra A. Song; Sarah Evans; Chad A. Meadows; Darby McCloud

Poster No. 1477

Senescence Induction In Human And Equine Cartilage Explants For Mechanistic Investigation And Development Of Senolytic Therapy For Osteoarthritis

Michaela E. Copp; Garrett A. Sessions; Kayla R. Darris; Margaret C. Flanders; Rachel Gagliardi; Lauren V. Schnabel; Brian O. Diekman

Poster No. 1478

Mechanical Properties Of Human Tibiofemoral Cartilage Correlate With Macromolecular Proton Fraction Obtained From Ultrashort Echo Time Magnetization Transfer (ute-mt) Modeling

Behnam Namiranian; Saeed Jerban; Erik W. Dorthe; Yajun Ma; Jonathan Wong; Zhao Wei; Yanjun Chen; Eric Y. Chang; Darryl D'Lima; Jiang Du

Poster No. 1479

GRK5 Deletion Suppresses The Progression Of Inflammatory Arthritis In Mice

Masakazu Toya; Yukio Akasaki; Hidetoshi Tsushima; Takuya Sueishi; Ichiro Kurakazu; Masanari Kuwahara; Taisuke Uchida; Yasuharu Nakashima

Poster No. 1480

Growth Of Articular Cartilage Explants Is Depth-varying, Regulated, And Mediated By Extracellular Matrix

Erica G. Gacasan; Kyle D. Jadin; Barbara L. Schumacher; Albert C. Chen; Robert L. Sah

Poster No. 1481

Nanoparticle-mediated Tgf- β Release From Gelatin Microribbon Scaffolds Enhances Msc-based Cartilage Regeneration In Vivo

Danial Barati

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Poster No. 1482

Glut1 Is Required For Growth Plate And Articular Cartilage Homeostasis During Postnatal Growth

Cuicui Wang; Jun Ying; Jie Shen; Regis O'Keefe

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Cartilage and Synovium—Injury and Healing

Poster No. 1483

Engineering A Biopolymer Hydrogel To Inhibit Osteogenesis After Growth Plate Injury

Steven Smiley; Christopher Erickson; Jake Newsom; Michael Stager; Shane Weatherford; Melissa Krebs; Karin A. Payne

Poster No. 1484

Naproxen Treatment Inhibits Progression Of Osteoarthritis But Delays Fracture Healing In Rats

James P. O'Connor; David N. Paglia; Deboleena Kanjilal; Yazan Kadkoy; Spiro Moskonas; Charlene Wetterstrand; Joseph Galloway; Jeffrey D. Tompson; Maya D. Culbertson

Poster No. 1485

CRLF1 And Chondrocyte Differentiation

Fenglin Zhang; Kathryn Esposito; Claire Shortt; Thorsten Kirsch

Poster No. 1486

Enhancing Of Cartilage Regeneration Of Synovium-derived Mesenchymal Stem Cells-encapsulated Hydrogel By Recombinant Human Transglutaminase-4

Hee jung Park; Hyun Cheol Bae; Joonhee Lee; Sun Young Wang; Yu Jeong Kim; Du Hyun Ro; Myung Chul Lee; Hyuk Soo Han

Poster No. 1487

Higher Bmi Is Associated With Increased Biochemical Degeneration Of Knee Articular Cartilage After Marathon Running—A Quantitative T2-relaxation Magnetic Resonance Imaging Study

Zhongzheng Wang; Fei Tian; Shaobai Wang; Ming Han Lincoln Liow; Songtao Ai; Tsung-Yuan Tsai

Poster No. 1488

Intraarticular CXCL16 Expression Following Anterior Cruciate Ligament Rupture: Implications For Injury-Induced Mesenchymal Stem Cell Recruitment In Post-Traumatic Osteoarthritis

Stephen J. Redding; Lucas M. Junginger; Phillip M. Rzczycki; Tristan Maerz

Poster No. 1489

Synovial Fluid Biomarkers At The Time Of Arthroscopy Predict 5-year Outcomes

Matthew T. Kingery; Amit K. Manjunath; Danielle H. Markus; Elyse J. Berlinberg; Lena Kenny; Eric J. Strauss

Poster No. 1490

Engineered Cartilage From Primary Human Chondrocytes With Homozygous Knockout Of The Cell Cycle Inhibitor P21

Susan D'Costa; Matthew J. Rich; Brian O. Diekmann

Poster No. 1491

Thrombospondin-2, An Endogenous Anti-angiogenic Protein, Is Strongly Expressed By The Synovium Following Traumatic Injury In Mice

Lucas Junginger; Anita Reddy; Stephen Redding; Phillip Rzczycki; Kurt Hankenson; Tristan Maerz

Poster No. 1492

Effects Of Raav-mediated Gene Transfer And Overexpression Of Bone Morphogenetic Protein 3 (bmp-3) On The Osteochondrogenic Fate Of Human Bone Marrow-derived Mesenchymal Stem Cells

Jagadeesh K. Venkatesan; Gertrud Schmitt; Henning Madry; Magali Cucchiari

Poster No. 1493

Effects Of Passage Number And Culture Split Ratio On Chondrocyte Metabolic Responses

Spencer E. DeLucia; Aaron M. Stoker; Nicole T. Greco; Eli L. Pratte; James L. Cook

Poster No. 1494

A New Ihh-hydrogel Complex Repaired Growth Plate Injury By Inhibiting Bone Bridge Formation

Guoxuan Peng; Jin Deng; Hong Sun; Lebin Gan; Qiang Wang; Jiali Sun; Ya Tian; Lei Wei

Poster No. 1495

Modulate The Inflammation After Trauma With An Immuno-tuning Scaffold In Critical Size Chondral Defect

Francesca Taraballi; Guillermo Bauza; Lewis Francis; Shazad Shaikh; Misha Hopson; Federica Banche Niclot; Patrick McCulloch; Ennio Tasciotti

Poster No. 1496

Upward Running Is More Harmful Than Level Surface Or Downslope Running In Promoting Osteoarthritis Progression During Strenuous Running Of Rats

Shaowei Wang; Yaqiong Chang; Mengbo Zhu; Ruijia Yang; Yanjing Guo; Yang Zhang; Lei Wei

Poster No. 1497

Evaluation Of A Bio-composite Gel For Osteochondral Defect Repair In An Ovine Model

Yan Lu; Brett Nemke; Jacob Lewis; Mark McClendon; Mark Markel; Samuel Stupp

Poster No. 1498

Regeneration Of Hyaline Cartilage Using Mesenchymal Stem Cells And Cyclic Shear Loading

Stephanie Valenzuela; John Szivek; Efren Barron-Villalobos; David A. Gonzales; Laura C. Hacker

PS2-066

Cartilage and Synovium – Structure, Function and Mechanics

Poster No. 1499

Effects Of Kinematic And Kinetic Variables On Cartilage Surface Stiffness And Chondrocyte Viability: A 3-factor Central Composite Design Of Experiments

Catherine Yuh; Benjamin Witt; Tony Chen; Susanna Chubinskaya; Suzanne Maher; Markus A. Wimmer

Poster No. 1500

Structural And Functional Changes In Human Patellar Cartilage In Osteoarthritis

Mikko T. Nissinen; Nina Hänninen; Mithilesh Prakash; Mikko J. Nissi; Juha Töyräs; Miika T. Nieminen; Rami K. Korhonen; Petri Tanska

Poster No. 1501

PTH Treatment Prior To Cyclic Joint Loading Improves Cartilage Health And Attenuates Load-induced OA Development

Sophia N. Ziemian; Allison R. Brown; Timothy M. Wright; Miguel Otero; Marjolein C. H. van der Meulen

Poster No. 1502

Cartilage Micromechanical Behaviour Under Biaxial Cyclic Sliding

Andrew D. Speirs; Abdul R. Khan; Ali Shegaf

Poster No. 1503

Genetically Engineered ASCs As A Model System For Cartilage Tissue Engineering And Disease Modeling

Dakota B. Katz; Nguyen PT Huynh; Ilan Palte; Farshid Guilak

Poster No. 1504

Enhancement Of Proliferation And Migration Abilities Of Mesenchymal Stem Cells And Chondrocytes By Exosomes Derived From Mesenchymal Stem Cells From Four Different Tissues

Kazumasa Kawata

Poster No. 1505

In Vivo Estimation Of Cartilage Stiffness Using Noninvasive Imaging Metrics

Hattie C. Cutcliffe; Pavan K. Kottamasu; Amy L. McNulty; Charles E. Spritzer; Louis E. DeFrate

Poster No. 1506

Influence Of Synovial Fluid Components On The Friction In Cartilage-on-Cartilage Compared To Cartilage-on-Implant

Alicia H.A. Damen; Tannin A. Schmidt; Keita Ito; Corrinus C. van Donkelaar

Poster No. 1507

Correlations Among Articular Cartilage Biomechanical Properties And Metabolic, Biomechanical And Histomorphometric Characteristics Of Bone From Osteoarthritic Knees

Muhammad H. Salim; Aaron M. Stoker; Hayley G. Ockerhausen; Matthew Z. Gao; Tyge J. Ortega; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James A. Cook

Poster No. 1508

In Vivo Tibiofemoral Cartilage Contact During Walking And Running

Tom Gale; Favian Su; William Anderst

Poster No. 1509

Articular Cartilage Recovery Response During Dynamic Biaxial Loading

Andrew D. Speirs; Ali Shegaf

Poster No. 1510

Multiscale Viscoelasticity Of Hyaluronan And Recombinant Human Proteoglycan-4

Leonardo Martin-Alarcon; Randy Ewoldt; Tannin Schmidt; Milana Trifkovic

Poster No. 1511

Osteoarthritis Functional Assessment In The Rat Anterior Cruciate Ligament Transection Model

Yuyan Wang; Emma S. Wagner; Kevin J. Chen; Taidhgin J. Keel; Phoebe O. Ilevbare; Esther Abaraoha; Danqiao Yu; Aneri U. Patel; Jin Su; Amanda R. Watkins; Jonathan Cheetham; Kirk J. Samaroo; Heidi L. Reesink

Poster No. 1512

Biomechanics Of Tissue Engineered Cartilage Produced Using 3D Printing And Bioprinting

Thomas J. Kean; Rémi Dagenais; Sotcheadt Sim

Poster No. 1513

Contrast-enhanced Micro-ct For Ex Vivo Articular Imaging: Effects Of Phosphomolybdic Acid On Bone Mass Measurement And Histopathology. A Technical Note

Jean-Paul Roux; Roland Chapurlat; Julien Wegrzyn

Poster No. 1514

Non-Destructive Spatial Mapping Of GAG Loss In Articular Cartilage Using Confocal Raman Spectroscopy

Tianyu Gao; Alexander Boys; Lara A. Estroff; Lawrence J. Bonassar

Poster No. 1515

Development Of A 3D In Vitro Model Of Bone-cartilage Crosstalk

Paige V. Hinton; Shama Hussin; Oran D. Kennedy

Poster No. 1516

The Role Of Collagen And Elastin Fibers In The Dynamic Mechanical Viscoelastic Properties Of The Temporomandibular Joint Disc

Samaneh Ghazanfari; Sepanta Fazaeli; Fereshteh Mirahmadi; Vincent Everts; Theo Smit; Jan Harm Koolstra

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Poster No. 1517

Controlled Factorial Design Of Experiment To Optimize Mechano-induced Chondrogenesis Of Human MSCs—A Feasibility Study

Yann D. Ladner; Angela R. Armiento; Jess G. Snedeker; Martin J. Stoddart

Poster No. 1518

Architecture Dependent Compressive Failure Modes In Scaffolds For Articular Cartilage Repair

Byumsu Kim; Jill Middendorf; Nicole Diamantides; Itai Cohen; Nikolaos Bouklas; Lawrence Bonassar

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Cartilage and Synovium—Treatment and Therapeutics

Poster No. 1519

Priming With Liprostatin-1 Of UC-MSCs Attenuates Development Of Osteoarthritis

YouJung Kim; Joonhee Lee; Hyun Cheol Bae; Hee Jung Park; Du Hyun Ro; Myung Lee; Hyuk-Soo Han

Poster No. 1520

Graphite-containing Electroactive Fibers And Hydrogels For Cartilage Tissue Engineering

Christopher Z. Mosher; Yilin Yang; Elisa C. Fang; Beini Wang; Clark T. Hung; Theanne N. Schiros; James C. Hone; Helen H. Lu

Poster No. 1521

Long Term Assessment Of Porcine Articular Cartilage Repair After Transplantation Of Human Pluripotent Stem Cell-derived Chondrocytes.

Frank A. Petrigliano; Nancy Liu; Siyoung Lee; Jacob Bogdanov; Denis Evseenko

Poster No. 1522

Chondrogenesis Of Articular Cartilage Progenitor Cells With BMP-9

Kenneth Weekes; Phillip Lam; Ajit Elhance; Leah Snyder; Brandon Markway; Brian Johnstone

Poster No. 1523

Modulating The Mirna Interactome Of Ipsc-derived Chondrocytes To Control The Response To Inflammatory Stimuli

Alison Ross; Rodrigo Coutinho de Almeida; Yolande F M Ramos; Jiehan Li; Ingrid Meulenbelt; Farshid Guilak

Poster No. 1524

Physical Therapy Improves Efficacy Of Cellular Therapy On Joint Function, Cartilage Morphology, And Pain Symptoms In A Rodent Model Of Post-traumatic Osteoarthritis

Jarred Kaiser; Jay M. McKinney; Sarvagna Raval; Krishna Pancha; Daniel Sok; Julia Fuller; Nick J. Willett

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Enhanced Cartilage Repair By Microfracture With An Oral Administration Of TGF β 1 Inhibitor In Neutrally Aligned Knee After High Tibial Osteotomy

Yuuka Fujiwara; Tomoya Iseki; Hiroshi Nakayama; Takashi Utunomiya; Shintaro Onishi; Syota Morimoto; Kenta Amai; Yuka Fujiwara; Shinichi Yoshiya; Toshiya Tachibana

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Development Of A Murine Model To Study Mitochondrial Transfer Between Mesenchymal Stromal Cells And Injured Chondrocytes

Maureen P. Bennett; Renee Vivancos-Koopman; Lindsay A. Seewald; Timothy Robinette; Michelle L. Delco

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Photocrosslinked Hyaluronan Hydrogels Improve The Repair Of Full-thickness Chondral Defects With Microfracture: A 1-year Study In A Large Animal Model

Liang Gao; Rebecca Roels; Lars Goebel; Riccardo Beninatto; Magali Cucchiari; Henning Madry

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Cyclin-dependent Kinase Inhibitor-1-deficient Mice Are Susceptible To Enhanced Inflammation Associated With Rheumatoid Arthritis

Yoshinori Takashima; Shinya Hayashi; Koji Fukuda; Tomoyuki Kamenaga; Kenichi Kikuchi; Masahiro Fujita; Masanori Tsubosaka; Yuichi Kuroda; Shigo Hashimoto; Koji Takayama; Tomoyuki Matsumoto; Ryosuke Kuroda

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Mir-122 Inhibits And Mir-451 Exacerbates Inflammatory And Catabolic Responses To Il-1b In Rat Articular Chondrocytes

Kayla M. Scott; Dane W. Nielson; David J. Cohen; Madeline Hays; Mark W. Grinstaff; Taylor B. Lawson; Brian D. Synder; Zvi Schwartz; Barbara D. Boyan

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Newly Engineered Chimera Proteins Sab704 And Sab715 Enhance Proteoglycan Metabolism In Porcine Chondrocytes: Comparison To Bmp-7

Daisuke Fukui; Rikiya Baba; Stephanie Y. Adachi; Hiroshi Yamada; Somi Yoon; Senyon Choe; Koichi Masuda

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Clinical And Histological Assessment Of Atelocollagen-associated Autologous Chondrocyte Implantation For The Repair Of Chondral Defects In The Knee

Takuma Kaibara; Eiji Kondo; Koji Iwasaki; Tomohiro Onodera; Yoshitaka Oda; Shinya Tanaka; Kazunori Yasuda; Norimasa Iwasaki

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Active Preservation Of Osteochondral Graft Under Cyclic Hydrostatic Pressure For Active Preservation Of Osteochondral Graft Under Cyclic Hydrostatic Pressure Formaintaining Cartilage Integrity And Subchondral Bone Quality

Gergo Merkely; Christan Lattermann; Julia Charles; Shuichi Mizuno

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Single-step Ultra Purified Alginate (upal) Gel Transplantation Technique -first In Human Trial-

Tomohiro Onodera; Rikiya Baba; Koji Iwasaki; Masatake Matsuoka; Shinji Matsubara; Eiji Kondo; Koji Suzuki; Masayuki Inoue; Norimasa Iwasaki

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Pain Persistence And Articular Cartilage Degeneration Were Significantly Alleviated By An Anti-fibrotic Drug Treatment In Monoiodoacetate Induced Rat Arthritis Model

Jaesung An; Kunikazu Tsuji; Hiroaki Onuma; Takashi Hoshino; Kei Inomata; Hiroki Katagiri; Kazumasa Miyatake; Yusuke Nakagawa; Jun Hino; Hiroshi Hosoda; Ichiro Sekiya; Takeshi Muneta; Hideyuki Koga

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Genetic Modification Of Human Bone Marrow Aspirates Via Raav-mediated Overexpression Of Sox9 And Tgf- β Upon Vector Delivery Via Pnass-grafted Microstructured Poly(ϵ -caprolactone) Scaffolds
Katja Gross; Céline Falentin-Daudré; Cédryck Vaquette; Véronique Migonney; Magali Cucchiari; Jagadeesh K. Venkatesan

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Targeting Twist1 To Promote Stromal Cell-based Cartilage Repair
Hao Zhang; Zhengliang Luo; Yuping Wang; Shane Barton; Yufeng Dong

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Bone Marrow-derived Mesenchymal Stem Cell Spheroids Reduce Pain And Inflammation During Synovitis
Jennifer G. Barrett; Sophie H. Bogers

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Examining The Paracrine Effects Of Adipose-derived Mesenchymal Stem Cells In A Bovine Model Of Osteoarthritis
Jedediah Bondy; Pablo Palacios; Tristan Tran; Hudson Liang; Dan Li; Lidia Frejo; Ryan Nixon; Christopher Larsen; Daniel A. Grande

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Therapeutic Efficacy Of Encapsulated Human Mesenchymal Stem Cells In Osteoarthritis
Jay M. McKinney; Thanh N. Doan; Krishna A. Pucha; Lanfang Wang; Laura D. Weinstock; Levi Wood; Rebecca D. Levit; Nick J. Willett

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Adult Ovine Chondrocytes In Expansion Culture Adopt Progenitor Cell Properties That Are Favorable For Cartilage Tissue Engineering
John David Kisiday; Bethany E. Liebig; Laurie R. Goodrich

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Zinc Oxide Fibrous Composite Scaffold For Osteochondral Defect Repair
Shuo Wang; Ateka Khader; Blanca Teran; Ashley Abanilla; Louis Rizio; Treena L. Arinze

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Concentration-dependent Effects Of Cobalt And Chromium Ions On Osteoarthritic Chondrocytes

Christoph Bauer; Christoph Stotter; Vivek Jeyakumar; Eugenia Niculescu-Morza; Bojana Stojanovic; Manel Rodriguez Ripoll; Thomas Klestil; Friedrich Franek; Stefan Nehrer

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Pure Platelet-rich Plasma Is Most Effective For The Treatment Of Arthritis
Naoko Araya; Kazumasa Miyatake; Kunikazu Tsuji; Hiroaki Onuma; Saisei An; Ichiro Sekiya; Hideyuki Koga

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Deubiquitinase Ubiquitin Specific Protease 25 (usp25) Positively Regulates Chondrogenic Differentiation Of Human Bone Marrow Derived Mesenchymal Stem Cells
Dawoon Baek; Kyoung-Mi Lee; Jihyun Kim; Sujin Jung; Soyeong Joung; Eun Ae Ko; Min Jung; Seung Hwan Han; Jin Woo Lee; Kwang Hwan Park

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Localization Of The Human Adipose Tissue-derived Mesenchymal Stem Cells Injected Intra-articularly For Rat Cartilage Defect Repair
Yasuyuki Tomiyama; Hisashi Mera; Naoki Oike; Hidenori Nonaka; Yui Ueno; Riuko Ohashi; Atsunori Tsuchiya; Osamu Tanifuji; Tomoharu Mochizuki; Naoto Endo; Shuji Terai

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Attenuation Of The Knee Osteoarthritis Progression By Transplantation Of Non-cultured Human Adipose-derived Regenerative Cells In Mice
Takahiro Yamashita; Takehiko Matsushita; Shu Watanabe; Koji Nukuto; Akiyoshi Mori; Yuta Nakanishi; Tetsuya Yamamoto; Yuji Hiroshima; Kazuyuki Ibaraki; Nobuaki Miyaji; Kanto Nagai; Daisuke Araki; Noriyuki Kanzaki; Yuichi Hoshino; Hideki Iwaguro; Satoshi Sobajima; Ryosuke Kuroda

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Evaluating The Cartilage Repair Potential Of Bone Marrow Concentrate Via Intra-Articular Injections In The In Vivo Rabbit Model
T. Kamarul; V.S. Jeremy; A.R. Nabillah; M.R. Murali

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Automated Characterization And Selection Of Clonal Cell Populations Derived From Human Cartilage From Osteoarthritic Knees – Relevance To The Development Of Effective Cellular Therapies
Venkata Prasanna R. Mantripragada; Edward Carson; Hannah Simmons; Olivia Krebs; John Barnard; George Muschler

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Elimination Of Residual Ipscs From Derived Chondrocytes By Using A Cytotoxic Antibody Specifically Bound To Ips May Reduce The Risk Of Tumorigenicity
Takuji Miyazaki; Tomohiro Onodera; Jun-ichi Furukawa; Hisatoshi Hanamatsu; Liang Xu; Kentaro Homan; Toshisuke Kawasaki; Norimasa Iwasaki

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Autologous Cartilage Particulate For Treatment Of Cartilage Defects: Impact Of Different Arthroscopic Shavers On Viability And In Vitro Migration

Elizabeth Feeney; Sabine Schaumann; Robert Benedict; Andrea Matuska

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Synovial Fluid Mitochondrial DNA Concentration Increases Following Cartilage Injury

Lindsay A. Seewald; Laura E. Keller; Maureen P. Bennett; James W. Casey; Michelle L. Delco

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Developing A Porcine Tissue Engineered Cartilage For Pre-clinical Studies

Jessica M. Falcon; Shital Kandel; William Querido; Justin Morman; Jay Patel; Robert Mauck; Nancy Pleshko

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Regenerative Effects Of Synovial Mesenchymal Stem Cell Derived Exosomes On Osteoarthritis Chondrocytes

Dan Li; Pablo Palacios; Jedidiah Bondy; Christopher Antonacci; Michael Sayegh; Haixiang Liang; Andrew Wong; Daniel Grande

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Microfracture With Awls Creates Significant Surface And Deep Damage In Standard Sized Defects Compared To A Needle Marrow Access Device

Jason L. Koh; Joseph Saladino; Dan Fisher; Trevor Laughlin

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Characterization Comparison Of Patient-matched Autologous Therapy Product Concentrations

Kathleen Steckbeck; Jennifer Woodell-May

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Biomechanical Characterization Of A Hydropacer Cartilage Implant

Gerke H. Schuiringa; Keita Ito; Corrinus C. van Donkelaar

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Differences In Morphological Characteristics Of Progenitor And Non-progenitor Cells Derived From Human Cartilage Characterized Using Time-lapse Phase Contrast Microscopy

Venkata Prasanna R. Mantripragada; Sarinna Vasavada; Kylyn Tan; George Muschler

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Exogenous Hyaluronan Can Affect The Metabolic Reprogramming In Articular Chondrocytes Treated With IL-1 β

Yutaka Yokota; Nobunori Takahashi; Kenya Terabe; Naoki Ishiguro; Toshihisa Kojima

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Sclerostin Inhibits IL-1 β Induced Late Stage Chondrogenic Differentiation Through Wnt/ β -catenin Signaling Pathway

Kazuma Miyatake; Ken Kuamagai; Sosuke Imai; Yasuteru Yamaguchi; Yutaka Inaba

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Automated Morphometric Assessment Of Human Cartilage-derived Progenitors And Their Clonal Progeny Demonstrates Heterogeneity That Is Relevant To Cell Source Selection And Quality Control

Venkata Prasanna R. Mantripragada; Edward Carson; Geroe Muschler

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Kus121, A Vcp Modulator, Regulates Endoplasmic Reticulum Stress-induced Apoptosis And Protects Against Progression Of Post-traumatic Osteoarthritis In Rats

Motoo Saito; Kohei Nishitani; Hanako O Ikeda; Shigeo Yoshida; Sachiko Iwai; Xiang Ji; Akihiro Nakahata; Koichi Murata; Tomoki Aoyama; Hiromu Ito; Hiroshi Kuroki; Akira Kakizuka; Shuichi Matsuda

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A Novel Strategy To Enhance Microfracture Treatment With Stem Cell Derived Factor-1 In A Rat Model

Haixiang Liang; Taylor L. Mustapich; Noah B. Chinitz; Anthony A. Catanzano; John Schwartz; Zev Klapholz; Pasquale Razzano; Nadine O. Chahine; Nicholas A. Sgaglione; Daniel A. Grande

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Meniscus—Diseases and Disorders

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Characterizing Meniscal Metabolic Responses Based On Severity Of Meniscal Pathology In The Osteoarthritic Knee

Elizabeth D. Messenger; Aaron M. Stoker; Kamryn S. Chastain; Chantelle C. Bozynski; James A. Keeney; James L. Cook

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Meniscus—Growth, Development and Aging

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Synovial Cells With Hydrostatic Pressure And Collagen/polyethylene Glycol Films For Meniscal Repair

Tomomi Takebayashi; Elizabeth G. Matzkin; Antonia F. Chen; Jeffrey K. Lange; Shuichi Mizuno

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Meniscus—Injury and Healing

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Histologic And Molecular Assessment Of The Torn Human Meniscus At The Time Of Arthroscopic Partial Meniscectomy

Farrah A. Monibi; Tania Pannellini; Camila Carballo; Miguel Otero; Russell Warren; Scott Rodeo

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Meniscus Ramp Lesion Increases Knee Instability In ACL Injured Knee

Masahiro Nozaki; Makoto Kobayashi; Sanshiro Yasuma;
Yusuke Kawanshi; Hiroaki Fukushima; Masahito Yoshida;
Tetsuya Takenaga; Gen Kuroyanagi; Hideki Murakami

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Diagnostic Accuracy Of Meniscus Ramp Lesions In Preoperative MRI And Intraoperative Arthroscopic Examination

Hiroaki Fukushima; Masahiro Nozaki; Makoto Kobayashi;
Sanshiro Yasuma; Yusuke Kawanishi; Tetsuya Takenaga;
Yohei Kawaguchi; Yuko Nagaya; Hideki Murakami

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Meniscus—Structure, Function and Mechanics

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Effects Of Solute Size And Tissue Anisotropy On Diffusion In Porcine Meniscus: A Frap Study

Francesco Travascio; Alicia R. Jackson

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Morphology Of The Meniscal Attachment Using Three-dimensional Computed Tomography: A Cadaveric Study

Koh Tanifuji; Goro Tajima; Jun Yan; Moritaka Maruyama;
Atsushi Sugawara; Shinya Oikawa; Ryunosuke Oikawa; Sho Kikuchi;
Go Nakano; Minoru Doita

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Discrimination Of Regional Meniscus Cell And Chondrocyte Phenotype In Osteoarthritic Donor-matched Tissues

Jingsong Wang; Sally Roberts; Weiguo Zhang; Karina Wright

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The Lateral Meniscus Extrudes With And Without Root Tear: A Robotic Study Using Ultrasound

Theresa Anita Diermeier; Robert E. Tisherman; Kevin Wilson;
Satoshi Takeuchi; Tomoyuki Suzuki; Calvin K. Chan; Kentaro Onishi;
Richard E. Debski; Volker Musahl

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Medial Meniscus Extrusion Of The Intact And Injured Porcine Knee In Response To External Loading Conditions Applied By Robotic Testing System

Tomoyuki Suzuki; Satoshi Yamakawa; Kentaro Onishi; Calvin K. Chan;
Satoshi Takeuchi; Theresa Diermeier; Volker Musahl; Richard E. Debski

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Meniscus—Treatment and Therapeutics

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Medial Meniscus Posterior Root Repair Decreases The Posteromedial Meniscal Extrusion In The Knee-flexed Position: A 3D MRI Volumetric Analysis

Yoshiki Okazaki; Takayuki Furumatsu; Shinichi Miyazawa; Shin Masuda;
Yuki Okazaki; Takaaki Hiranaka; Toshifumi Ozaki

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Activin A/BMP-7 Chimera (SAB704 And 715) Upregulate Extracellular Matrix Metabolism By Pig Meniscus Tissue And Meniscus Cells Cultured In Alginate Beads

Rikiya Baba; Daisuke Fukui; Stephanie Y. Adachi; Alyssa Alvarez;
Somi Yoon; Senyon Choe; Koichi Masuda

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Comparison Of Three Different Fixation Constructs For Supracondylar Fractures Of The Humerus In Children: A Biomechanical Study

Tomohiro Yasuda; Masayuki Arai; Keikichi Kawasaki; Koki Nakamura;
Toshihiko Arima; Ken Yamazaki; Junji Hayashi; Koji Kanzaki;
Katsunori Inagaki

Poster No. 1576

Quantitative Morphological Analysis Of Synovial Mesenchymal Stem Cells During Adhesion To The Meniscus

So Suzuki; Mitsuru Mizuno; Yuji Kohno; Nobutake Ozeki; Koji Otabe;
Hisako Katano; Kunikazu Tsuji; Hideyuki Koga; Ichiro Sekiya

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A New Type I Collagen-based Meniscus Implant

Shu-Tung Li; Wei Chang; Gan Zhou

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A 3D Printed Meniscus Tissue Displays Appropriate Biomechanical And Structural Properties For Surgical Implantation And Physiological Function

Samuel Wadsworth; Sheng Pan; Kamal Khan; Colleen Mathieu;
Keddie Brown; Elli Kapyla; Mark Hurtig; Spiro Getsios; Simon Beyer;
Tamer Mohamed

PS2-073

Tendon and Ligament—Diseases and Disorders

Poster No. 1579

Tissue Inflammation Signatures Suggest A Resolving Inflammatory Milieu In Frozen Shoulder

Stephanie Georgina Dakin; Amar Rangan; Fernando O. Martinez;
Stephen Brealey; Matthew Northgraves; Lucksy Kottam; Cushla Cooper;
Christopher D. Buckley; Andrew J. Carr

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The Role Of Mitochondrial Dysfunction In The Development Of Chronic Tendinopathy Using A Murine Model Of Rotator Cuff Tendon Impingement
Xueying Zhang; Xiang-Hua Deng; Susumu Wada; Ying Zhang; Yake Liu; Zhe Song; Brett Croen; Johnanthan Sevick; Scott A. Rodeo

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MMP-1 Protein Levels In Human TMJ Ligament And Disc Tissues Are Differentially Correlated With Pain
Meagan Ita; Prabesh Ghimire; Eric Granquist; Beth A. Winkelstein

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A Novel Strategy To Ameliorate Age-related Degeneration Of Human Achilles Tendon Stem/progenitor Cells
Heyong Yin; Franziska Strunz; Denitsa Docheva

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Withdrawn

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Sustained Exposure Of Substance P On Tendon Causes Tendinopathy
Seo Yoon Oh; Hyun Hae Lee; Yunhui Jeong; Minjung Baek; Hyeonkyung Kim; Wooyeol Ahn; Do Kyung Kim; Yoon Jang; Soonchul Lee

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Withdrawn

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Tendon and Ligament—Growth, Development and Aging

Poster No. 1586

Tgfbeta Signaling Is Necessary In Gli1-expressing Cells For Enthesis Development
Lee Song; Mikhail Golman; Adam Abraham; Stavros Thomopoulos

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Age-related Decrease Of Macromolecular Proton Fraction (MMF) In Tendons Estimated By Ultrashort Echo Time Magnetic Resonance Imaging (UTE-MRI) Magnetization Transfer (mt) Modeling
Saeed Jerban; Yajun Ma; Behnam Namiranian; Aria Ashir; Hoda Shirazian; Zhao Wei; Nicole Le; Mei Wu; Zhenyu Cai; Jiang Du; Eric Chang

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Combating Aging-induced Advanced Glycation Endproducts In Tendons With Tensile Loading
Panth Doshi; Kelly Ott; Jennifer L. Puetzer

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Detection Of Age-related Tendon Molecular Changes By Raman Spectroscopy
Nai-Hao Yin; Anthony W. Parker; Pavel Matousek; Helen L. Birch

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Cross-Sectional Area And Length Of The ACL Bundles Vary With Sex And Age During Adolescence
Stephanie G. Cone; Ryan Barnes; Jeffrey T. Spang; Matthew B. Fisher

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Investigating Novel Gene Function And Mechanotransduction In Vertebrate Tendon Development
Pavan Nayak; Arul Subramanian; Wenqi Wang; Thomas Schilling

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Hypoxia And Mechanical Stimulation Promote Proliferation Of Human Fetal ACL Cells In Mtor-dependent Manner
Zhen Tan; Can Xin; Monica A. Linde; Wenzhong Wei; Freddie H. Fu; Bing Wang

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Tendon and Ligament—Injury and Healing

Poster No. 1593

Withdrawn

Poster No. 1594

Early Molecular Damage Response Of MRL/MpJ Supraspinatus Tendon To Overuse Injury Highlights Enhanced Repair Capacity
Monideepa Chatterjee; Cassidy Higgins; Nelly Andarawis-Puri

Poster No. 1595

Chronic Human Tendinopathy Exhibits Distinct Immune Cell Populations
Daniella M. Fodera; Takayuki Fujii; Scott Rodeo; Lionel Ivashkiv; Nelly Andarawis-Puri

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Sex Differences Among Intraarticular Knee Fibroblastic Responses To Cyclic Strain
Sebastian Cardona-Ramirez; Aaron M. Stoker; James L. Cook; Richard Ma

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Lineage Tracing Of PdgfrB Cells In Murine Tendon Injury Model
Natalie L. Leong; Jie Jiang

Poster No. 1598

Corticosteroid Treatment Can Improve Tendon Healing, Even In A Partly Unloaded Condition
Franciele Dietrich-Zagonel; Per Aspenberg; Pernilla Eliasson

Poster No. 1599

Tendon Thickening And Mechanical Properties Predict Long-term Outcomes For Patients With Achilles Tendinopathy
Patrick Corrigan; Ryan T. Pohlig; Daniel H. Cortes; Karin G. Silbernagel

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Defining The Phenotypic Stages Of Tenocyte-myofibroblast Differentiation
Jessica Ackerman; Alayna Loiselle

Poster No. 1601

Fibroblastic Responses From Common ACL Grafts Are Affected By Sex And Mechanical Strain

Sebastian Cardona-Ramirez; Aaron M. Stoker; James L. Cook; Richard Ma

Poster No. 1602

Longitudinal Assessment Of Serum, Urine, And Synovial Fluid Biomarkers Following Bone-patellar Tendon-bone Anterior Cruciate Ligament Autograft Reconstruction Using A Canine Model

Preston N. Wolfe; Aaron M. Stoker; Chantelle C. Bozynski; James L. Cook; Richard Ma

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Synoviocytes Modulates The Mechanical Response Of Fibroblasts From Common ACL Grafts

Sebastian Cardona-Ramirez; Aaron M. Stoker; James L. Cook; Richard Ma

Poster No. 1604

Case Study: Shear Wave Tensiometry Detects Bilateral Asymmetry In Achilles Tendon Loading In Gait During Recovery From Unilateral Achilles Tendon Rupture And Repair

Jack A. Martin; Todd J. Hullfish; Kathryn M. O'Connor; Josh R. Baxter; Darryl G. Thelen

Poster No. 1605

Activity Of Wnt Signaling In Regenerated Tendon And Its Effects On Tendon Repair

Takefumi Sakaguchi; Bisei Ohkawara; Hideki Hiraiwa; Shinya Ishizuka; Kinji Ohno; Naoki Ishiguro

Poster No. 1606

Microdialysis As A Longitudinal, In Vivo Assessment Of Achilles Tendon Healing In A Rat Model

Joseph B. Newton; Snehal Shetye; Courtney Nuss; Matthew Counihan; Louis Soslowsky

Poster No. 1607

Isolation Of Differentially Activated Tendon Cell Populations

Anne E.C. Nichols; Alayna E. Loiselle

Poster No. 1608

Biomechanical, Histological And Micro CT Characterization Of Partial-width Full-thickness Supraspinatus Tendon Injury In Rats

Hiroki Oda; Yukitoshi Kaizawa; Austin Franklin; Jung Gi Min; Jack Akerman; Zhen Wang; James Chang; Paige Fox

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Comparison Of Modified Movin And Bonar Tendinopathy Scores Of Ovine Models Of Rotator Cuff Degeneration And Human Rotator Cuff Tendons With A History Of Partial Tears

Devin von Stade; James W. Johnson; Jeremiah Easley; Dan Regan; Brad Nelson; Eileen Hackett; Holly Stewart; Lauren Berens; Cecily Broomfield; Tony Romeo; Ted Schlegel; Kirk McGilvray

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Tsp4 As A Preventative And Therapeutic Biologic For Treatment Of Tendon Injuries And Ruptures

Arul Subramanian; Xianchao Bao; Wafa Tawackoli; Dmitriy Sheyn; Thomas F. Schilling

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SB-431542 Modulates The Wound Healing Response Of Ligament Fibroblasts: Implications Following ACL Reconstruction

Andy J. Lee; Lance A. Murphy; Gerard A. Ateshian; Stavros A. Thomopoulos; Roshan P. Shah; Clark T. Hung

Poster No. 1612

Tenogenically Differentiated Adipose-Derived Stem Cells For Achilles Tendon Rupture Repair In Vivo

Taylor L. Mustapich; Jonathan L. Sgaglione; Matthew W. Sgaglione; Christopher Larsen; Pooja N. Swami; Haixiang Liang; Daniel A. Grande

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Comparison Of ACL, PCL, And MCL Responses To Cytokine Stimulation

Nicholas J. Choma; Aaron M. Stoker; Richard Ma; James L. Cook

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Tendon and Ligament – Structure, Function and Mechanics

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Flexor Tendon Reconstruction In A Canine Model Using Decellularized Allogenic Intrasyovial Tendon Revitalized With Autologous Bone Marrow-derived Mesenchymal Stem Cells

Subin Lin; Ramona Reisdorf; Chun-Kuan Lu; Alyssa Vrieze; Steven Moran; Peter C. Amadio; Kai-Nan An; Chunfeng Zhao

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Biomechanical Comparison Of Age, Sex And Body Mass Effects In A Mouse Model Of Noninvasive Anterior Cruciate Ligament Rupture

Johnathan Sevvick; Camila Carballo; Tony Chen; Samuel Green; Saral Patel; Xueying Zhang; Daoyun Chen; Xiang-Hua Deng; Scott Rodeo

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Collagen Denaturation Begins At The Onset Of Yield In Both Positional And Energy Storing Tendons

Allen H. Lin; Jared Zitnay; Alexandra Allan; Jeffrey Weiss

Poster No. 1617

Elastin And Collagen Control Slow Relaxation Of Knee Ligaments And Patellar Tendon In Tension

Aapo Ristianiemi; Dristi Regmi; Petri Tanska; Lauri Stenroth; Rami K. Korhonen

Poster No. 1618

Ultrasound Echogenicity Is Associated With Fatigue Damage And Failure Of Achilles Tendon In A Cadaveric Loading Model

Elaine C. Schmidt; Todd J. Hullfish; Kathryn M. O'Connor; Michael W. Hast; Josh R. Baxter

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Alteration Of Tendon Ecm Mechanics And Quantification By MRI
T₂* Mapping

Matthias R. Kollert; Martin Krämer; Nicholas M. Brisson; Taimoor H. Qazi;
Jürgen R. Reichenbach; Georg N. Duda

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Quantitative Matrix Mapping Of Indirect And Direct Insertions Of The
Medial Collateral Ligament

Hannah R. Childs; Mingjiu Wang; Nicholas Madoff; Catherine Wang;
Helen H. Lu

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Injury And Healing Effect On Fatigue Properties Of Collagen V
Haploinsufficient Female Murine Tendons

Jaclyn A. Carlson; Zakary M. Beach; Stephanie N. Weiss; David E. Birk;
Louis J. Soslowsky

Poster No. 1622

Relationship Between Viscoelastic Properties, Age And Sex In
Asymptomatic Achilles Tendons

Andrew L. Sprague; Daniel Awokuse; Ryan T. Pohlig; Daniel H. Cortes;
Karin G. Silbernagel

Poster No. 1623

Evaluation Of The Anatomical Features Of Popliteus Tendon And Dlm
Using The 3D MRI

Norifumi Suga; Masakazu Ishikawa; Narumi Kodaka; Akinori Nekomoto;
Nobuo Adachi

Poster No. 1624

Effect Of Patella Alta On The Native Anatomometricity Of The Medial
Patellofemoral Complex: A Cadaveric Study

Adam B. Yanke; Hailey P. Huddleston; Kevin Campbell; Michael Redondo;
Alejandro Espinoza; Jorge Chahla; Jack Farr

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Histological and Biomechanical Combines Of The Extensor Digitorum
Longus And Remnant Anterior Cruciate Ligament In The Rabbit
Knee Model

Keiko Goto; Nobuto Kitamura; Tsuneari Takahashi; Eiji Kondo;
Kazunori Yasuda

Poster No. 1626

Mechanical Consequences Of Critical Defect Size In The Rat Rotator
Cuff Attachment

Rachel K. Klink; Ryan C. Locke; Anna Lia Sullivan; Megan L. Killian

Poster No. 1627

In Vivo Nano-biomechanical Characteristics Of Tendon In A Mouse
Tail Model

Hao Xu; Ting Liang; Liang-Yi Wei; Zong-Ping Luo

Poster No. 1628

Different Storage Conditions Can Alter Structural Properties Of Healing
Tendons But Not The Maximum Force

Franciele Dietrich-Zagonel; Malin Hammerman; Magnus Bernhardtsson;
Pernilla Eliasson

Poster No. 1629

Measuring Elbow Ulnar Collateral Ligament Strain With High
Density Mapping

Marc G. Lubitz; Peter Garas; Karen Troy; David Magit

Poster No. 1630

Anatomical And Histological Analysis Of The Transverse “Band” Of The
Medial Ulnar Collateral Ligament Complex

Matthew J. Gluck; Zachary L. Bernstein; Joshua D. Kirschenbaum;
Ezequial Zaidenberg; Michael R. Hausman

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Tendon and Ligament—Treatment and Therapeutics

Poster No. 1631

Mechanisms Of Action Of Pulsed Electromagnetic Field Therapy On A Rat
Model Of Rotator Cuff Injury And Repair

Julianne Huegel; Stephanie N. Weiss; Courtney A. Nuss; Harina A. Raja;
Erik I. Waldorff; Nianli Zhang; James T. Ryaby; Louis J. Soslowsky;
Andrew F. Kuntz

Poster No. 1632

Effects Of Different Rehabilitation Exercises On In-vivo Elongation Of
Anterior Cruciate Ligament Bundles

Cong Wang; Changzhao Li; Willem Alexander Kernkamp; Hai Hu;
Chich-Haung Yang; Tsung-Yuan Tsai

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Controlled Delivery Of Oxo-M And 4-PPBP Via Multidomain Peptides For
In Situ Tendon Regeneration

Gayoung Park; Solaiman Tarafder; Ashleigh Alex; Eugenia J. Lee; Zain
Siddiqui; Vivek Kumar; Chang H. Lee

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MRL/Mpj Tendon Derived Therapeutic Improves Matrix Organization And
Quality In Scar-mediated Tendon Healing

JJ Paredes; Ashley Pekmezian; Daniel Massillon; Ankur Singh; Nelly
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Methylprednisolone Decreases The Viability And Matrix Gene Expression
Of Intrasynovial Tendon Progenitor Cells

Stasia N. Sullivan; Matthew T. Brokken; Sushmitha Durgam

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Investigation Of Mechanism For The Specificity Of Oxo-M And 4-PPBP To
Tendon Stem/progenitor Cells

Gayoung Park; Ye Jin An; Eugenia J. Lee; Chang H. Lee

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3D Biofabrication Of Polypropylene Fumarate For Bone-ligament Composite Interfacial Tissue Engineering

Lorraine Mottishaw; Christopher Buksa; Nafisa Elghazali; Ruben Trujillo; Serafina Lopez; Matthew Rush; Christina Salas

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Development Of A Novel Macromolecule-doped And Mechanically Reinforced Core-shell Scaffold For Ligament Repair

Pedro J. Gouveia; Alan Ryan; Sara Romanazzo; Simon Carroll; Tom Hodgkinson; Isabel Amado; Joanna Sadowska; Sally Ann Cryan; Daniel J. Kelly; Fergal J. O'Brien

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Serum Free Differentiation Of Mescs To Scxgfp+ Tenocytes

Deepak A. Kaji; Sunita L. D'Souza; Alice H. Huang

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SMO4755, A Potential Disease-Modifying Treatment For Tendinopathy, Modulates The Wnt Pathway Via Inhibition Of CLK2 And DYRK1A

Vishal Deshmukh; Alyssa-Lauren O'Green; Timothy Seo; Yusuf Yazici

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Vascular Endothelial Growth Factor Inhibited The Gene Expression Of Tenomodulin In Tendon-proper Derived Cells And Paratenon Derived Cells In Vitro

Sosuke Imai; Ken Kumagai; Yasuteru Yamaguchi; Kazuma Miyatake; Yutaka Inaba

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Effectiveness Of Dehydroepiandrosterone In Vitro For High Glucose-induced Oxidative Stress On Tenocytes

Shintaro Mukohara; Yutaka Mifune; Atsuyuki Inui; Hanako Nishimoto; Takeshi Kataoka; Takashi Kurosawa; Kohei Yamaura; Tomoya Yoshikawa; Ryosuke Kuroda

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Effects Of Vascular Endothelial Growth Factor Blocker On Tenogenic Differentiation In Vitro

Seiya Ishikawa; Ken Kumagai; Sosuke Imai; Kazuma Miyatake; Yutaka Inaba

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Decellularized Tendon Matrix (dtm) Uses A Novel Processing Technique To Maintain A Native Growth Factor Profile

Anna Laura Nelson; David Bernholt; Peter Millett; Chelsea Bahney

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Human Muscle Contractures Are Associated With A Different DNA Methylation Imprint In Resident Muscle Stem Cells, Impairing Their Homeostasis And Preventing Myofiber Formation

Andrea A. Domenighetti; Lydia A. Sibley; Nicole Broda; Shannon Strader; Vineeta T. Swaroop; Henry G. Chambers; Sudarshan Dayanidhi; Richard L. Lieber

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Contractures In Brachial Plexus Birth Injury Are A Problem Of Muscle Length, Not Muscle Strength: Translating Findings From An Animal Model To Humans

Athanasia Nikolaou; Jason Long; Kendra Eckstein; Roger Cornwall

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Remodeling Of Neuromuscular Junctions In Target Muscle Following Nerve Regeneration In Mice After Delayed Peripheral Nerve Repair

Leyang Li; Mitsuhiro Enomoto; Hiroyuki Yokoyama; Hidetoshi Kaburagi; Takashi Hirai; Yoshiaki Wakabayashi; Shinichi Sotome; Atsushi Okawa

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A Novel Model Of PDAC-associated Muscle Wasting Reveals Intramuscular Adipogenesis At End-stage Disease

Calvin L. Cole; Deja M. Robinson; Edward M. Schwarz

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ADAMTS17 Mutation Causes Weill Marchesani Syndrome And Results In Intracellular Accumulation Of Collagen VI

Stylianos Zafeirios Karoulis; Zerina Balic; Anthony Vandersteen; Bert Callewaert; Dirk Hubmacher; Dirk Hubmacher

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Skeletal Muscle Atrophy Induced By Immobilization Get Worse With Vitamin D Deficiency Or Lack Of Vitamin D Receptor In Schwann Cells

Satoshi Nakamura; Akihito Oya; Arikiko Kanaji; Takeshi Miyamoto; Morio Matsumoto; Masaya Nakamura

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Relationships Between Intermuscular Fat And Disease Severity In Individuals With Mild-to-Moderate Hip Osteoarthritis

Alyssa Bird; Carla N. Kinnunen; Tijana Popovic; Sharmila Majumdar; Richard B. Souza

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Transcriptional Profiling Of Skeletal Muscle Stem Cells After Tgfβ1 Stimulation

Ping Guo; Aiping Lu; Johnny Huard

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The Risk Of Mortality For Sarcopenia In A General Japanese Elderly Population: The Hisayama Study

Kimitaka Nakamura; Daigo Yoshida; Takanori Honda; Jun Hata; Mao Shibata; Yoichiro Hirakawa; Yoshihiko Furuta; Hiro Kishimoto; Takanari Kitazono; Yasuharu Nakashima; Toshiharu Ninomiya

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Myopalladin Promotes Muscle Growth Through Modulation Of The Serum Response Factor Pathway

Richard L. Lieber; Duane Yamamoto; Marco Caremani; Marco Linari; Louise Bang

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Hmgb2 Regulates The Differentiation Of Mesenchymal Stem Cells By Suppressing The Expression Of β -catenin

Takuji Yokoe; Deokcheol Lee; Etsuo Chosa; Noboru Taniguchi; Narantsog Choijookhuu; Yoshitaka Hishikawa

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Treating Volumetric Muscle Loss With The Beta-3 Adrenergic Receptor Agonist Amibegron To Improve Muscle Quality

Zili Wang; Carlin Lee; Obiajulu Agha; Mengyao Liu; Hubert Kim; Brian T. Feeley; Xuhui Liu

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Characterization Of CD56⁺ Human Rotator Cuff Cells As Candidates For Treatment Of Chronically Injured Muscle

Jonathan D. Gatto; Temi Aderibigbe; Daniel McClintick; Genbin Wu; Vivian Hu; Brandon Levian; Michael R. Hicks; Ayelet Dar; Frank Petrigliano

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Assessment Of Fatty Degeneration Of The Gluteal Muscles In Patients With Tha Using Mars MRI: Reliability And Accuracy Of Commonly Used Classification Systems

Christian Klemt; Joseph Simeone; Venkatsaiakhil Tirumala; Wittawat Boonyanuwat; Wenhao Chen; Liang Xiong; Young-Min Kwon

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Exposure To Non-thermal Infrared Light Is Protective In A Murine Hindlimb Model Of Ischemia-reperfusion Injury

Tyler Compton; Janine Struve; John Krolkowki; Nicholas Poellinger; Dorothee Weihrach; James T. Ninomiya

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Surgically Repairing Acute Achilles Tendon Rupture Partially Restores Resting Gastrocnemius Tension

Todd J. Hullfish; Kathryn M. O'Connor; Josh R. Baxter

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Skeletal Muscle—Structure, Function and Mechanics

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A Finite Element Musculoskeletal Model With Three-dimensional Muscles
Junyan Li

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Intramuscular Anatomy Drives Muscle Collagen Content Variation
Benjamin I. Binder-Markey; Nicole Broda; Richard L. Lieber

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Non-uniform Contractile Mechanism Of Gluteus Medius Muscle Through A Numerical Approach

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The Effects Of Fiber Bundle Size And Vertebral Level On Passive Stiffness Of The Lumbar Paraspinal Muscles In A Rat Model

Masoud Malakoutian; Shun Yamamoto; Sandeep Sadaram; Jason Speidel; Jie Liu; John Street; Stephen H.M. Brown; Thomas R. Oxlund

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Skeletal Muscle—Treatment And Therapeutics

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Bisphosphonate Use In Soft Tissue Calcification Disorders- Careful Consideration Is Needed

Zachary K. Backstrom; Stephanie N. Moore-Lotridge; Maddison O. Guthrie; Qiaoli Li; Jouni Uitto; Jonathan G. Schoenecker

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VEGF Angiogenesis Improves Gene Therapy In Temporalis Muscle Of DMD Murine Model

Can Xin; Wenzhong Wei; Biao Kuang; Yiqing Wang; Ying Tang; Bing Wang



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Tensile Properties Of Physiotherapy Tapes

Joe Herbert; Tian Wang; Matthew Pelletier; John Ward; Kerri Blyth; William R. Walsh

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Increased Adipogenesis In Chronically Injured Murine Rotator Cuff Cultures In The Presence Of Fibrosis Inhibiting Compound

Elan Karlin; Jonathan Gatto; Genbin Wu; Daniel McClintick; Vivian Hu; Temi Aderibigbe; Brandon Levian; Bruno Peault; Frank A. Petrigliano; Ayelet Dar

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Bone—Diseases and Disorders

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Abnormal Vascularity And Extracellular Matrix Remodeling Are Associated With Delayed Secondary Ossification In Mucopolysaccharidosis VII

Zhirui Jiang; Casey P. Johnson; Olli Nykanen; Mikko Nissi; Yian Khai Lau; Meilun Wu; Kai D. Ludwig; Jutta Ellerman; Margret L. Casal; Lachlan J. Smith

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Spatial And Temporal Variation Of Trabecular Microarchitecture, Mineral And Collagen Content And Mechanical Properties In The Proximal Tibia From An Ovariectomised Rat Model

Laura M. O'Sullivan; Laoise M. McNamara

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Osteonal Encroachment As A Means Of Following Subtle Changes In Bone Remodeling With Estrogen Depletion

Shannon L. Kelly; Carola L. Pechey; Jennifer M. MacLeay; Anthony S. Turner; Clifford M. Les

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Inhibition Of MAGL Suppresses Rankl-induced Osteoclastogenesis And Ovariectomized Osteoporosis Via NF- κ B And MAPK Signalling

hui liu; Xuying Sun; fengjing guo; Jun Xiao

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Osteoporosis Leads To Degradation Of Tendon Mechanical Properties In An Ovine Model

James W. Johnson; Jeremiah Easley; Brad Nelson; Eileen Hackett; Devin von Stade; Lauren Berens; Cecily Broomfield; Katie Bisazza; Erin McCready; Kirk McGilvray

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Examining Changes In Bone Perfusion And Bone-specific Biomarkers With Ischemic Stroke

Sandra Stangeland-Molo; Nicholas J. Hanne; Sitora Khodjaniyazova; David C. Muddiman; Jacqueline H. Cole

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Sinusoid And Stochastic Transmission Of Whole Body Vibration To Axial And Appendicular Bones Using Vibrating Cage Platform For Long Duration Vibration On Rabbit

Amin Mohamadi; Ashlyn Aiello; Thomas L. Szabo; Melissa Putman; Ara Nazarian; Brian Snyder

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Correlations Among Histomorphometric Properties And Metabolic Responses Of Bone Obtained From Patients With Knee Osteoarthritis

Matthew Z. Gao; Aaron M. Stoker; Hayley G. Ockerhausen; Tyge J. Ortega; Muhammad H. Salim; Ashwin Garlapaty; Conner B. Schmid; Chantelle C. Bozynski; James A. Keeney; James L. Cook

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Masticatory Effects On Regional Variation Of Estrogen Deficient Rat Jaw Bone Density

Keiichiro Watanabe; Samantha Lewis; Ai Ni; Toru Deguchi; Beth Lee; Do-Gyoon Kim

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A New Method To Generate Osteosarcoma Cells With Cancer Stem Cell Properties By Reprogramming Factors

Shuichi Fujiwara; Teruya Kawamoto; Yohei Kawakami; Hitomi Hara; Kazumichi Kitayama; Shunsuke Yahiro; Takashi Aoi; Ryosuke Kuroda; Toshihiro Akisue

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Spp1 Derived From Macrophages In Epididymal Fat Tissue Affects Bone Marrow Homeostasis Through Regulating The Activities Of Macrophages In Mice

Bingyang Dai; JianKun Xu; Xu Li; Le Huang; Jie Mi; Hao Yao; Jiali Wang; Lizhen Zheng; Wenxue Tong; Chow Ho-kiu Dick; Xuan He; Ling Qin

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Oral Magnesium And Vitamin C Supplementation Alleviates Steroid-associated Osteonecrosis In Rats

Lizhen Zheng; Jiali Wang; Jiankun Xu; Le Huang; Ri Zhang; Haiyue Zu; Xuan He; Jie Mi; Qianqian Pang; Ling Qin

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Trabecular Bone Microstructural And Mechanical Changes In A Simulated Osteoarthritis Progression

A. Teodora Dinescu; Yizhong Hu; Anisha Tyagi; X. Edward Guo

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The Pro-inflammatory Cytokines, Interleukin-17A And Tumour Necrosis Factor-alpha Activates The Nfkb Signalling Pathway In Osteoblast Like Cells Through Protein Kinase R.

Sophie Gilbert; Jemma Cornish; Tobias Russell; Deborah Mason

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Cross-linked Collagen Peptides As Non-invasive Urinary Biomarkers Of Bone Quality In Patients With Osteogenesis Imperfecta

Charlotte Gistelincx; MaryAnn Weis; Jyoti Rai; Brendan Lee; David R. Eyre



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Evidence That The Role Of Osteocytes In The Development Of Osteolytic Lesions Is Gender Specific

Renee Ormsby; Lucian Solomon; Roumen Stamenkov; David Findlay; Gerald J. Atkins

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Increased Expression Of Fgf21 From Dystrophic Skeletal Muscle Negatively Affects Bone Homeostasis In Dystrophin/utrophin Double Knock-out Mice

Hongshuai Li; Hui Sun; Ling Wang; Wei Feng; Dwayne Carney; Ella Meyler; MaCalus Hogan

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Diabetes Alters Trabecular Bone Structure In A Rat Femoral Implant Model

Kyle D. Anderson; Frank C. Ko; Amarjit S. Virdi; D. R. Sumner; Ryan D. Ross

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Spatial Coupling

Edward Puzas; Tzong-jen Sheu; Diana Metz-Estrella

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Genetic Variants In FUBP3 And CTNNB1 Influence Musculoskeletal Phenotypes In Young Adults

Megan McClanahan; Nisha Kapani; Harriet Martin; Sean Haimowitz; Julia McGuinness; Karuna Panchapakesan; Elmer Rajah; Austin Gillies; Dustin Hittel; Eric Hoffman; Heather Gordish-Dressman; Laura L. Tosi

Poster No. 1689

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Poster No. 1690

Fpr1 Is Associated With Osteogenesis And Bone Fracture Healing

Xinlin Yang; Wanan Xiao; Di Zhu; Rui He; Dongfeng Pan; Sang-Hyun Lee; Jason Kerrigan; Quanjun Cui

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Quantitative And Subjective Analysis In Training Observers For Identifying The Deltoid Tuberosity On Radiographs

John G. Skedros; Brody W. King; James H. Marshall; Nathan W. Camp

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Collagen X Biomarker Assay (CXM) LMS Analysis For Normally Growing Children

Ryan Coghlan; William Horton; Robert Olney

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Development Of A Comparative Primate Skeletal Cell Culture Model To Study Single-Cell Gene Expression Patterns And Transcriptional Responses To Mechanical Strain

Genevieve Housman; Yoav Gilad

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Matrix Vesicle Micrornas Regulate Growth Plate Chondrocyte Proliferation And Maturation

Niels Asmussen; Michael McClure; Zhao Lin; Zvi Schwartz; Barbara Boyan

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Detriments In Humeral Bone Microstructure And Mineralization Following Brachial Plexus Birth Injury

Emily B. Fawcett; Nikhil N. Dixit; Katherine R. Saul; Jacqueline H. Cole

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Age-related Cell Intrinsic Changes Sensitize Skeletal Stem And Progenitor Cells To Pro-inflammatory Stimuli

Anne Marie Josephson; Kevin Leclerc; Philipp Leucht

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Meteorin-like Protein Is A Novel Rejuvenation Factor In Aged Fracture Healing

Rong Huang; Xiaohua Zong; James White; Gurpreet Baht

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Age Effect On Bone Toughness In Osteogenesis Imperfecta

Anxhela Docaj; Minsup S. Jeong; Elizabeth A. Zimmermann; Robert O. Ritchie; Alessandra Carriero

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Evaluating Bone Mineral Density In Patients Less Than 5 Years Old From CT Scans Without A Calibration Phantom

Joyce H. Keyak; Liliane Gibbs; Sandra J. Murray; Christine Hsu; Christopher A. Jin

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Periosteal Resection Promotes Longitudinal Bone Growth Via Activating Endochondral Ossification In Growing Mouse Model

Shinya Kaneko; Masaki Matsushita; Kenichi Mishima; Hiroshi Kitoh; Naoki Ishiguro

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The 14-3-3 Isoform Epsilon (14-3-3 ϵ): A Novel Negative Regulator Of Bone Formation In Mice

Jean De La Croix Ndong

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Osteogenic Biomarker Expression Of Mesenchymal Stem Cells In Response To Substrate Dimensionality And Stiffness

Kirstene A. Gultian; Antonio Quinones; Sandra Miskiel; Tae Won B. Kim; Sebastián L. Vega

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Assessing The Effect Of Physeal Biopsy On Angular Deformity In A Lamb Model

Richard Epperson; Dustin Williams; Brooke Kawaguchi; Mary Dickerson; John Maxwell; Peter Stevens

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Genetic Variation In GDF5 And MIR196A2 Associated With Musculoskeletal Phenotypes In Young Adults

Sean Haimowitz; Nisha Kapani; Harriet Martin; Megan McClanahan; Julia McGuinness; Austin Gillies; Elmer Rajah; Karuna Panchapakesan; Dustin Hittel; Heather Gordish-Dressman; Laura L. Tosi

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Protein-A In Regulating Osteogenesis Of Osteoblasts In Osteoblast Knockout Mice

Chou Liang Yin; ChunHwan Chen; Yi-Hsung Lin; Mei-Ling Ho; Chau-Zen Wang

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Leptin Receptor Expressing Stromal Cells Give Rise To A Bone Lining Cell Population That Mediates Loading Induced Bone Formation Via Adenylyl Cyclase 6

Mathieu Riffault; Gillian P. Johnson; Madeline M. Owen; Behzad Javaheri; Andrew A. Pitsillides; David A. Hoey

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Progenitor Cells And Differentiated Osteoblasts Contribute To Loading Induced Periosteal Bone Formation In Adult Mice

Taylor L. Harris; Heather M. Zannit; Matthew J. Silva

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Cathepsin K-cre-mediated Deletion Of Tsc2 Stimulates Bone Formation Via Alterations In Osteocyte Function

Julia F. Charles; Nicola Alesi; Haoming Liu; Molly Zgoda; Elizabeth P. Henske

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Bone – Injury and Healing

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Long-term Assessment Of Gait And Strength Following Surgical Repair By Intramedullary Nailing Of Isolated Tibial Shaft Fracture

Brittany M. Becker; Rachel K. Muscott; Zoe A. Bartynski; Chad J. Beck; Jill M. Martin; Gerald F. Harris; Gregory J. Schmeling; Jessica M. Fritz

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Characterization Of Cd11b⁺ Depleted Macrophages In Vitro And During Acute Inflammation Following Bone Fracture

Sarah Hozain; Jessica Cottrell

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Understanding Bone Regeneration Through Cellular Metabolic Adaptations

Julia Löffler; Stefan Kempa; Georg N. Duda

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Probiotic Supplements Protect Against Post-Traumatic Bone Loss By Tightening The Intestinal Barrier

Joseph L. Roberts; Trevor Darby; Lorenzo M. Fernandes; Rheinalt Jones; Hicham Drissi

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Transcutaneous CO₂ Application Accelerates Bone Fracture Healing In Diabetic Rats

Takahiro Oda; Takahiro Niikura; Tomoaki Fukui; Keisuke Oe; Yohei Kumabe; Kenichi Sawauchi; Ryo Yoshikawa; Ryosuke Kuroda

Poster No. 1714

CTRP3 Regulates Endochondral Fracture Healing And Bone Remodeling

Daniel W. Youngstrom; Robert L. Zondervan; Nicole R. Doucet; Parker K. Acevedo; Hannah E. Sexton; Emily A. Gardner; JonCarlos S. Anderson; Priyanka Kushwaha; Hannah C. Little; Susana Rodriguez; Ryan C. Riddle; Ivo Kalajzic; G. William Wong; Kurt D. Hankenson

Poster No. 1715

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Poster No. 1716

Identification And Characterization Of Human Periosteal Skeletal Stem/progenitor Cells

Lorenzo Deveza; Kevin Lei; Laura Ortinau; Youngjae Jeong; Dongsu Park

Poster No. 1717

Structural Mechanics Of Late-stage Tibial Nonunions: A Preliminary Multi-center Analysis

Peter Schwarzenberg; James A. Harty; Meir Marmor; Chinenye O. Nwachuku; Hannah L. Dailey

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A Mouse Model Ablating Proliferating Osteoblast Lineage Cells After Fracture Leads To Atrophic Nonunion

Katherine R. Hixon; David Sykes; Susumu Yoneda; Evan Buettmann; Anna N. Miller; Matthew J. Silva

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Impact Of Age On The Osteogenic Capacity Of Periosteal Cells

Matthew Stewart; Kalyn Herzog; Daniel Shinsako

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3D Joint Space Width From Weight Bearing CT Detects Progressive Narrowing After Tibial Pilon Fractures

Erin McFadden; Michael Ho; Kevin Dibbern; Michael Willey; Julie Agel; Conor Kleweno; Justin Haller; Thomas Higgins; J. Lawrence Marsh; Donald D. Anderson

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Perilacunar Remodeling Following Femoral Fracture In Mice

Armaun J. Emami; Cristal S. Yee; Tamara Alliston; Blaine A. Christiansen

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A Prospective, Longitudinal Study Of Whole Blood Gene Expression Profiling Of Patients Fitted With Osseointegrated Lower-limb Prosthesis

Andrew Miller; Sujee Jeyapalina; Brian T. Bennett; Karen Eilbeck; James Peter Beck

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Systemic Blockade Of Notch Signaling Inhibits Bmp2 Induced Bone Regeneration

Parker K. Acevedo; Yadav Wagley; Anne J. Ryan; Kathleen Conner; Ivo Kalajzic; Daniel W. Youngstrom; Kurt D. Hankenson

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Maresin1 Restores Macrophage Function To Improve Aged Fracture Healing
Rong Huang; Gurpreet S. Baht

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Macroporous PEG Microribbon-based Hydrogels With Tunable Stiffness Induce Robust MSC Osteogenesis In 3D And Do Not Require YAP Nuclear Translocation
Xinming Tong; Jianfeng Li; Fan Yang

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Distal Femur Fracture Fixation: Developing An Evidenced-based Method Of Optimizing Mechanotransduction
Elizabeth Rasmussen; Scott Telfer; William Lack

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Method For Image-based Radiodensity Profilometry To Measure Remodeling At The Bone-callus Interface In Humans
Tianyi Ren; Hannah Dailey

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Polyphosphate Nanoparticles Act As An Effective Inorganic Phosphate Source During Osteogenic Differentiation Of BM-MSCs
Angela R. Armiento; Luan Phelipe Hatt; Keith Thompson; Werner E.G. Mueller; Martin J. Stoddart

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Susceptibility To Cigarette Smoke-induced Compromised Fracture Healing In Mice Is Strain Dependent
Francis Y. Lee; Zichen Hao; Bo Li; Jun Li; Sean Cahill; Jungho Back

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Algorithm For Bone Defect Repair And Elementwise Material Mapping In Patient-specific Finite Element Models
Peter Schwarzenberg; Hannah L. Dailey

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Lowering Circulating Apolipoprotein E Levels Improves Aged Bone Fracture Healing
Rong Huang; Xiaohua Zong; Gurpreet S. Baht

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TGF-beta Signaling Inhibition Modulates Fibrosis In A Model Of Human Post-Traumatic Heterotopic Ossification
Jaira Ferreira de Vasconcellos; Marvin Dingle; Desraj Clark; Andres Piscoya; Alexander Dimtchev; Leon Nesti

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Optimization Of The Induced Membrane Technique And Subsequent Bone Grafting In A Small Animal Model
Hening Sun; Charles Godbout; Gareth Ryan; Emil H. Schemitsch; Aaron Nauth

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Biomechanical Evaluation Of Proximal Femoral Osteotomy Stabilized With A Retrograde Intramedullary Nail
Rachel L. Lenhart; Mei Wang; Gregory J. Schmeling

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Effects Of Spacer Porosity On The Masquelet Technique
Danielle Rinck; Ashley Ward; Lukas Buttke; Sangeeta Satish; Robert C. Roberts; Scott Sell; Tracy Watson; Daemeon Nicolaou; Sarah McBride-Gagy

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Modification Of Biomaterials With Polyelectrolyte Multilayer Films For Controlled Delivery Of Osteolysis Inhibitors
Alexis Fairman; Soobin Wang; Dahlia Alkekha; Alessia Battigelli; Wentian Yang; Douglas Moore; Valentin Antoci; Dioscaris R. Garcia; Christopher Born; Roy Aaron; Joseph Crisco; Anita Shukla

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Effects Of Static Compressive Loading And Collagen Density On In Vitro Vascular Growth For Bone Healing
Steven A. LaBelle; Marissa A. Ruehle; Robert E. Guldberg; Jeffrey A. Weiss

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Marijuana Use Results In Increased Time To Union In Surgically Treated Pediatric Fracture Patients
David Heath; Rose Ann Huynh; James M. Miller; Caleb Davis; Lynda Lee; Kush N. Shah; Grant D. Hogue

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Effect Of Callus Domain Geometry On Fuzzy Logic Bone Fracture Healing Models
Tianyi Ren; Hannah Dailey

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In Vivo Investigation Of An Injectable, Non-hardening Biomaterial For Local Bone Augmentation And Fracture Prevention
Ulrike Kettenberger; Arne Vogel; Dominique P. Pioletti

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Opioids Do Not Prevent Chronic Skeletal Pain Despite Fracture Union
Ushashi Dadwal; Zachary J. Gunderson; Zachary R. Campbell; Peter Malicky; Aamir T. Tucker; Natalie N. Taylor-Nguyen; Rachel Blosser; Fletcher A. White; Melissa A. Kacena

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Could Ph Changes Upon Injury Or Infection Of Musculoskeletal Tissues Be Utilized For More Targeted Treatment Approaches In The Future?

Julia C. Berkmann; Tazio Maleitzke; Ricarda Seemann; Agnes Ellinghaus; Claudia Schlundt; Hanna Schell; Gabriele Rußow; Tobias Winkler; Aaron X. Herrera Martin; Evi Lippens; Robert D. Turner; Joanna Shepherd; Anthony J. Bullock; Andrej Trampuz; Georg N. Duda; Katharina Schmidt-Bleek

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Base Deficit As A Predictor Of Fracture Nonunion In The Polytraumatized Patient

Neil Sardesai; Greg Gaski; Conor Cunningham; Zachary Gunderson; Raveesh Richard; Ashley Meagher; Todd McKinley; Roman Natoli

Poster No. 1747

Iron Catalyzes Collagen Formation During Calvarial Defects Healing, A Spectroscopic Study

Rafay Ahmed; Jeffry S. Nyman; Condon Lau

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Bone—Structure, Function and Mechanics

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Patterns Of Trabecular Osteoporotic Change In The Proximal And Distal Cadaveric Femur

Karthik Meiyappan; Abeer Al-Barghouthi; Loren Latta; Francesco Travascio

Poster No. 1749

Three Dimensional Microscopy Analysis Of Growth Plate Disturbances In Chronic Kidney Disease

Rocio Fuente; Angela Fernandez Iglesias; Helena Gil-Pena; Laura Alonso-Duran; Jose Manuel López; Fernando Santos

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Compressive Stiffness Measurement of Trabecular Bone Surrogates in a Bioreactor

Brian A. Kunath; Baixuan Yang; Roshni Rainbow; Heidi-Lynn Ploeg

Poster No. 1751

Correction Of Limb Alignment During Primary Total Knee Arthroplasty Is Correlated With Site Specific Post-operative Bone Remodeling At The Distal Femur And Proximal Tibia

Julien Chapleau; Richard Okafor; Bradley Lambert; Terry A. Clyburn; William Bryan; Thomas Sullivan; David Dong; Stephen Incavo

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Histomorphometric Study Of Three Graft Products For Alveolar Ridge Preservation

Meghan Norton; Tamika Thompson; Darnell Kaigler, Sr; Clifford M. Les

Poster No. 1753

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Poster No. 1754

Assessment And Visualization Of Anterior Pelvis Bone Density To Optimize Screw Fixation

Jerad Allen; Scott Telfer; Julie Agel; Ken Linnau; Christina Brunnquell; David Zamora; Daniel Hippe; Conor Kleweno

Poster No. 1755

DXA Image Based Deep Learning Of Trabecular Bone Microarchitecture: Does Increasing The Number Of DXA Images Improve The Prediction Of Microstructural Features Of Trabecular Bone?

Pengwei Xiao; Tinghe Zhang; Habeeb Mustapha; Joel Gomez; Yufei Huang; Xiaodu Wang

Poster No. 1756

Validation Of Finite Element Models Of The Mouse Tibia For Preclinical Applications

Sara Oliviero; Rob Owen; Gwen Reilly; Ilaria Bellantuono; Enrico Dall'Ara

Poster No. 1757

Three-dimensional Cortical Thickness In Femoral Diaphysis For Healthy Elderly And Osteoarthritic Knees

Sho Hokari; Tomoharu Mochizuki; Keiichiro Someya; Osamu Tanifuji; Ryota Katsumi; Koichi Kobayashi; Naoto Endo

Poster No. 1758

Distal Femoral Remodeling In Relation To Hip Adduction Angle At Heel Strike

Jerome Hausselle; Eranda Ekanayake

Poster No. 1759

Heterogeneous Tissue Modulus Improved Prediction Of Mechanical Behavior In Human Vertebral Cancellous Bone

Jason M. Cox; Joshua D. Smith; Marjolein van der Meulen; Jacqueline Cole

Poster No. 1760

Intramedullary Nail In The Ovine Metatarsus: A More Consistent Alternative To Plating?

Erik Brodin; Sara K. Steward; Quinn Smith; Benjamin C. Gadowski; Jeremiah Easley; Kirk McGilvray

Poster No. 1761

Evaluating The Determinants Of Atypical Femoral Fracture Using A Multiscale Finite Element Approach

Ahmet Demirtas; Chamith S. Rajapakse; Ani Ural

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Poster No. 1762

The Deltoid Tuberosity Index Is An Unreliable Measure Of Local Bone Quality In The Proximal Humerus

John G. Skedros; Brody W. King; Nathan W. Camp; Casey J. Kiser; James H. Marshall; Kent N. Bachus



Poster No. 1763—Guest Nation

Compressive Fatigue Behavior Of Equine Subchondral Bone
Behzad Babaei; Shaktivish Shaktivish; Fatemeh Malekipour;
Chris R. Whitton; Peter Vee-Sin Lee



Poster No. 1764—Guest Nation

How Much Does Subchondral Bone Microdamage Unload Its Underlying Bone?
Fatemeh Malekipour; Chris R. Whitton; Peter Vee Sin Lee

Poster No. 1765

Effect Of Hydration On Mechanical Properties Of Individual Collagen Fibrils And Extrafibrillar Matrix

Joel Gomez; Heber Martinez Barron; Wei Gao; Xiaodu Wang

Poster No. 1766

Plate-to-plate Angle Affects Stiffness Of A Double Plate Osteosynthesis To A Greater Extent Than Plate Working Length—A Finite Element Analysis Of An Ovine Tibial Defect

Gabriele Russow; Luis Becker; Mark Heyland; Georg Duda; Katharina Schmidt-Bleek; Sven Mårdian



Poster No. 1767—Guest Nation

Molecular And Systems Approaches To Probe Tissue Compartments' Molecular Transport And Sieving Properties
Lucy Ngo; Anton D. Nathanson; Melissa L. Knothe Tate

Poster No. 1768

Osteocyte Cx43 Regulates β -catenin Activity In Response To Mechanical Stimulation

Yue Zhang; Caleb Ryan; Henry J. Donahue

Poster No. 1769

High Shear Stress Amplitude In Combination With Prolonged Stimulus Duration Determine Induction Of Osteoclast Formation By Hematopoietic Progenitor Cells

Cornelia Bratengeier; Aneta Liszka; Johan Hoffman; Astrid D. Bakker; Anna Fahlgren

PS2-087

Bone—Treatment and Therapeutics

Poster No. 1770

Neutrophils-derived Annexin A1 Is A Potential Regulator Of Inflammatory Osteolysis Triggered By Polyethylene Wear Debris Of Orthopedic Implants
hend alhasan; Taku Ebata; M Alaa Terkawi; Yuan Tian; Gen Matsumae; Masanari Hamasaki; Daisuke Takahashi; Tomohiro Shimizu; Ken Kadoya; Norimasa Iwasaki

Poster No. 1771

Pdgfra Marks Distinct Perivascular Population With Different Osteogenic Potential Within Adipose Tissue

Yiyun Wang; Jiajia Xu; Carolyn Meyers; Yongxing Gao; Ye Tian; Leslie Chang; Kristen Broderick; Bruno Peault; Aaron James

Poster No. 1772

Initial Mechanical Stability Of Additively Manufactured Pegs In Cancellous Bone

Robert J. Kane; Nick Miltner; Bryan Smith; Weidong Tong

Poster No. 1773

Adipose-Derived Multipotent Stromal Cells Reduce Systemic Response To Xenograft

Catherine R. Takawira; Jonathan F. Bova; Sarindr Bhumiratana; Gerhard S. Munding; Rhett W. Stout; Marilyn A. Dietrich; Gordana Vunjak-Novakovic; Mandi J. Lopez

Poster No. 1774

Abaloparatide Prevents Unloading-induced Bone Loss In Adult Rats

Dian A. Teguh; Amanda E. Craven; Jordan L. Nustad; Daniel J. Brooks; Heike Arlt; Beate Lanske; Mary L. Bouxsein

Poster No. 1775

Therapeutic Effects Of Adipose Derived Regenerative Cells For Fracture Healing

Tomoyuki Kamenaga; Tomoyuki Matsumoto; Koji Takayama; Yoshinori Takashima; Masanori Tsubosaka; Koji Fukuda; Shingo Hashimoto; Shinya Hayashi; Ryosuke Kuroda

Poster No. 1776

Withdrawn

Poster No. 1777

PKM2 Suppresses Osteogenesis And Facilitates Adipogenesis By Regulating β -catenin Signaling And Mitochondrial Fusion And Fission
Jiachao Guo; Ranyue Ren; Fengjing Guo

Poster No. 1778

Meclozine Promotes Bone Growth And Bone Mineralization In Mouse Model Of Hypophosphatemic Rickets

Yasunari Kamiya; Masaki Matsushita; Kenichi Mishima; Tadashi Nagata; Naoki Ishiguro; Bisei Ohkawara; Kinji Ohno; Hiroshi Kitoh

Poster No. 1778A

Anterior Knee Pain After Intramedullary Nailing Of Tibial Shaft Fractures Using Suprapatellar Approach Versus Infrapatellar Approach

Matthew Coon

Poster No. 1779

Efficacy Of Soluble Lansoprazole-impregnated Artificial Bones For Repairing Cortical Bone Defects In Rabbits

Kenichi Mishima; Ryusaku Esaki; Masaki Matsushita; Naoki Ishiguro

Poster No. 1780

Pulsed Electromagnetic Field Therapy Enhances Bone Repair And Regeneration In Two Tibia Osteotomy Models In Sheep

Salim E. Darwiche; Anna Kaczmarek; Peter Schwarzenberg; Beat Lechmann; Peter Kronen; Stephen J. Ferguson; Hannah Dailey; Brigitte von Rechenberg; Karina Klein

Poster No. 1781

Bone-mimetic Re-mineralized Decellularized Bone/Aorta Matrix-alginate Bioink For Treatment Of Avascular Necrosis

Sumit Murab; John Stoffer; Sepideh Shanehsaz; Patrick W. Whitlock

Poster No. 1782

Effect Of Nucleoside Reverse Transcriptase Inhibitors (NRTIs) On Bone Structure In Young Adult And Aged Mice

Jacob Keith Richards Jamison; Yun Gao; Qian Chen

Poster No. 1783

Harnessing The Osteo-inductive Property Of JAGGED1 As A Maxillary Bone Regenerative Intervention

Archana Kamalakar; Angelica Amanso; Samir Ballestas-Naissir; Pallavi Bhattaram; Nick Willett; Hicham Drissi; Shelly Abramowicz; Steven Goudy

Poster No. 1784

Cannabidiol Increases Cell Viability, Proliferation, And Osteogenic Gene Expression In Human Mesenchymal Stem Cells

Rivka Ihejirika; David Kirby; Karan Patel; Daniel Buchalter; Anna Marie Josephson; Emma Muinos Lopez; Philipp Leucht

Poster No. 1785

Hypoxia Reduces Hematopoietic Contamination During In Vitro Culture Of Multipotent Bone Marrow Stromal Cells

Wendi Guo; Kassandra Spiller; Colleen Wu

Poster No. 1786

Withdrawn

Poster No. 1787

Withdrawn

Poster No. 1788

Smaller Pilot Hole Diameter In Low Density Bone Compensates For The Loss Of Pullout Force Caused By Reduced Bone Density

Alexander J. Stewart; James W. Fletcher; Anthony W. Miles

Poster No. 1789

Immunomodulatory Study Of Cryopreserved Spine-derived Cells

Renaud Sicard; Hanna Kaliada; Shabnam Namin

Poster No. 1790

Effects Of Pulsed Electromagnetic Field (pemf) On Distraction Osteogenesis

Yucong Li; Wayne YW Lee; Qi Pan; Zhengmeng Yang; Bin Wang; Nianli Zhang; Erik Waldorff; James Ryaby; Gang Li

Poster No. 1791

Withdrawn

Poster No. 1792

Population-based Analysis Reveals The Prognostic Benefit Of Primary Tumor Surgery On Lung Cancer Patients With Bone Metastasis

Honghua Zhang; Wei Wu; Zhiwei Liu; Zuowei Lei; Hanfeng Guan; Zhong Fang; Feng Li

Poster No. 1793

Effects Of Silver-containing Hydroxyapatite Coating And Vancomycin On Methicillin-resistant Staphylococcus Aureus

Akira Hashimoto; Hiroshi Miyamoto; Tomoki Kobatake; Takeo Shobuike; Takema Nakashima; Masaya Ueno; Takayuki Murakami; Iwao Noda; Motoki Sonohata; Masaaki Mawatari

Poster No. 1794

Release Of The EP₄ Receptor Agonist KMN-159 From Scaffolds In Vitro

Thomas A. Owen; Chandni Patel; Alexa Cahill; Stephen Barrett; Maria Ines Morano

Poster No. 1795

Effects Of Frequently Prescribed Diabetes Drugs On Normoglycemic Osteoblast Metabolism And Viability

Katherine A. Banner; Christopher D. Hamad; Kenneth B. Mathis; Catherine G. Ambrose

Poster No. 1796

Bone Bricks: Translating Tissue Engineering Into Practical Orthopaedic Surgery To Treat Critical Bone Defects

Glen Cooper; Evangelos Daskalakis; Bahattin Koc; Gordon Blunn; Amer Shoaib; Alper Gultekin; Fengyuan Liu; Paulo Bartolo; Andrew Weightman

Poster No. 1797

Advancement Of Intraosseous Saline Wash And Mesenchymal Stem Cell Injection Technique For Treatment Of Osteonecrosis

Vishal Gokani; Chi Ma; Mohit Singhal; Min Sung Park; Brad Niese; Harry K.W. Kim

Poster No. 1798

Knifeless Limb Lengthening: A Cadaveric Feasibility Study Of Non-invasive Periosteal Resection

Benjamin Ebben; Matthew Leiferman; Caitlin Wolfe; Sam Noonan; Ellen Leiferman; Tim Hall; Ashley Weichmann; Matthew Halanski

Poster No. 1799

Effects Of Transcutaneous Carbon Dioxide Application On Osteoporosis In Ovariectomized Rat

Kenichi Sawauchi; Takahiro Niikura; Tomoaki Fukui; Keisuke Oe; Yohei Kumabe; Takahiro Oda; Ryo Yoshikawa; Yoshitada Sakai; Ryosuke Kuroda

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PS2-088 Spine—Diagnostics

Poster No. 1800

Three-dimensional Computed Tomography Analysis Of Sacroiliac Joints In Hip Osteoarthritis Patients

Pei-Chen Choo; Koji Akeda; Masahiro Hasegawa; Yohei Naito; Junichi Yamada; Lyhour Ly; Nozomu Inoue; Koichi Masuda; Akihiro Sudo

Poster No. 1801

Hyoid Position As A Novel Predictive Marker For Postoperative Dysphagia And Dysphonia After Anterior Cervical Discectomy And Fusion

Yushi Hoshino; Ichiro Okano; Stephan N. Salzmänn; Courtney Ortiz Miller; Jennifer Shue; Andrew A. Sama; Frank P. Cammisia; Federico P. Girardi; Alexander P. Hughes

Poster No. 1802

Finite Element Analysis Of Human Vertebrae In Vivo Using Subject-specific Boundary Conditions

Daniel Oravec; Roger Zauel; Victor Chang; Yener N. Yeni

Poster No. 1803

Differential Diagnosis With Spinal Schwannoma To Meningioma Using Preoperative 18 F-FDG-PET/CT

Takeru Akabane; Tomoto Suzuki; Yukihide Shimamura; Michiaki Takagi

Poster No. 1804

The Risk Factor Of Spine Infections With MSSA Bacteremia Compared To The Others In Single Center

Kohei Ishikawa; Kaori Endo; Hideshi Harada; Noboru Miyagi

PS2-089 Spine—Growth, Development and Aging

Poster No. 1805

CDC5L, A Genetically Associated Gene Of The Ossification Of The Posterior Longitudinal Ligament (OPLL), Is Expressed In OPLL To Inhibit Osteogenesis And Promote Chondrogenesis

Go Jokoji; Shingo Maeda; Masahiro Nakajima; Ichiro Kawamura; Yuhei Yahiro; Hiroyuki Tominaga; Eiji Taketomi; Shiro Ikegawa; Noboru Taniguchi

Poster No. 1806

Wnt16 Regulates Vertebral Size And Patterning During Zebrafish Development

Andrea R. Cronrath; Yi-Hsiang Hsu; Ronald Y. Kwon; Claire J. Watson

Poster No. 1807

Blood Coagulability, Vascular Morphology And Vasculogenesis Capability Of Spinal Ligament Ossification Model Mice

Nana Ichikawa; Gentaro Kumagai; Kanichiro Wada; Sunao Tanaka; Toru Asari; Ayako Sasaki; Yasuyuki Ishibashi; Ken-ichi Furukawa

Poster No. 1808

Exome Sequencing Of A Multiplex Family With Idiopathic Scoliosis Implicates Cep162 In IS Pathogenesis

Elizabeth A. Terhune; Melissa Cuevas; Xiaomi Chen; Maria Cattell; Cambria I. Wethey; Anna Monley; Erin Baschal; Nancy Hadley-Miller

Poster No. 1809

Cost Analysis Of Early Onset Scoliosis Surgeries In The United States After The Introduction Of Magnetic Controlled Growing Rods

Swamy Kurra; Ravi Dhawan; Prisco DeMercurio; Nathaniel R. Ordway; William F. Lavelle

Poster No. 1810

A New Rat Model Of Lumbar Spinal Stenosis; Presenting Ligamentum Flavum Hypertrophy And Gait Disturbance

Kiyoshi Yagi; Kenji Kato; Nobuyuki Suzuki; Akira Kondo; Jun Mizutani; Koichi Masuda; Hideki Murakami

Poster No. 1811

Evaluation Of Sacral Table Angle In Adolescent Idiopathic Scoliosis Patients With Spondylolisthesis

Swamy Kurra; Baron Lonner; Nathaniel R. Ordway; William F. Lavelle

Poster No. 1812

How Much Do The Lumbar Radiograph Explain The Cause Of Low Back Pain And Related Disability In A General Population?

Hiroshi Hashizume; Noriko Yoshimura; Hiroyuki Oka; Yuyu Ishimoto; Keiji Nagata; Masatoshi Teraguchi; Hiroki Iwahashi; Yoshiki Asai; Takahide Sasaki; Shizumasa Murata; Shunji Tsutsui; Hiroshi Iwasaki; Munehiro Yoshida; Hiroshi Yamada

PS2-090 Spine—Injury and Healing

Poster No. 1813

Centripetal Migration Of Infiltrating Macrophage Drives Spontaneous Healing Process After Spinal Cord Injury

Kazu Kobayakawa; V. Reggie Edgerton; Takeshi Maeda; Osamu Kawano; Yasuyuki Ohkawa; Shingo Yoshizaki; Tetsuya Tamaru; Takeyuki Saito; Ken Kijima; Kazuya Yokota; Masamitsu Hara; Hirokazu Saiwai; Hiromi Kumamaru; Yoshihiro Matsumoto; Katsumi Harimaya; Kensuke Kubota; Yukihide Iwamoto; Yasuharu Nakashima; Seiji Okada

Poster No. 1814

A Novel Experimental Animal Model Of Delayed Palsy After Posterior Decompression Surgery Of The Cervical Spine

Atsushi Yokota; Keiichiro Kino; Yoshitada Usami; Masashi Neo

Poster No. 1815

Reproducing Homeostasis In Nucleus Pulposus By Mimicking Diurnal Spinal Motion In Vitro

Fabio Antonio Vieira; James D. Kang; Lydia M. Ferreira; Shuichi M. Mizuno

Poster No. 1816

The Effects Of Glp-1 Receptor Agonist Administration For The Treatment Of Spinal Cord Injury In A Rat Model

Toshihiro Noguchi; Hiroyuki Katoh; Keiko Yamaguchi; Satoshi Nomura; Masahiko Watanabe

Poster No. 1817

A Randomized, Controlled, Patient-blinded Study Of The Use Of Liposomal Bupivacaine In Thoracolumbar Spinal Fusions

Jenna Tabbaa

Poster No. 1818

Risk Factors That Decrease Complete Recovery In Idiopathic Scoliosis Surgery Associated Neurological Injuries

Swamy Kurra; Harman Chopra; Jinhui Shi; Stephen A. Albanese; Elizabeth A. Demers Lavelle; Nathaniel R. Ordway; William F. Lavelle

Poster No. 1819

Safety Assessment Of Cell Viability Using Fluorescent Glucose Uptake In Mesenchymal Stem Cells

Hiroya Ono; Gentaro Kumagai; Shusa Ohshika; Kanichiro Wada; Hitoshi Kudo; Toru Asari; Ayako Sasaki; Yasuyuki Ishibashi

Poster No. 1820

Improving Spine Posture And Reducing Passive Tissue Demands During A Common Ems Patient Handling Task

Steven A. Lavender; Yilun Xu; Carolyn M. Sommerich

Poster No. 1821

Prediction Of Low Back Disorder Recovery Using Patient Reported Outcomes + Trunk Kinematics

William S. Marras; Sue Ferguson; Jonathan Dufour; Prasath Mageswaran; Tristan Weaver; Safdar Khan; Ehud Mendel

PS2-091

Spine—Structure, Function and Mechanics

Poster No. 1822

Different Sensitivities To Voltage Gated Potassium Channel Blockers In Three Types Of Mechanoreceptors In Whisker Hair Follicles

Mayumi Sonekatsu; Akihiro Yamada; Manabu Yamanaka; Wataru Taniguchi; Hiroshi Iwasaki; Hiroshi Yamada; Jianguo G. Gu

Poster No. 1823

Mechanical Properties Of Spinal Cord Grey And White Matter—Relative Anisotropy In Confined Compression

Justin Yu; Neda Manouchehri; Shun Yamamoto; Brian Kwon; Thomas Oxland

Poster No. 1824

Numerical Variants Of Thoracolumbar Vertebrae And Transitional Lumbosacral Vertebrae On Computed Tomographic Images: Prevalence And Relationship To Low Back Pain Or Degenerative Spondylolisthesis

Masatoshi Morimoto; Kosuke Sugiura; Kosaku Higashino; Akihiro Nagamachi; Koichi Sairoy

Poster No. 1825

The Vital Role Of Epiphyseal Ring In Olif Stand-alone: A Biomechanics Study On Cadaver Model

Xuyang Zhang; Fengdong Zhao

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Midrange Kinematics Identify Early Changes In Adjacent Segment Motion After Cervical Arthrodesis

Samuel W. Pitcairn; Clarissa LeVasseur; Jeremy Shaw; William Donaldson; Joon Lee; William Anderst

Poster No. 1827

Myogenic And Fibro/adipogenic Stem Cell Populations In Paraspinal Muscles From Degenerative Lumbar Spine Surgery

Andreas S. Mueller-Immergluck; Menyao Liu; He Zhang; Alekos A. Theologis, MD; Jeannie Bailey, PhD; Aaron Clark, MD, PhD; Xuhui Liu, PhD; Brian T. Feeley, MD

Poster No. 1828

Preoperative Pain And Disability Are Poorly Correlated With Cervical Spine Anatomy And Kinematics In Patients With Cervical Spondylosis

Brandon K. Couch; Clarissa LeVasseur; Samuel Pitcairn; Jeremy D. Shaw; William F. Donaldson; Joon Y. Lee; William J. Anderst

Poster No. 1829

Biomechanical Comparison Of 3-level Cervical Spine Fusion With Anterior Plate Vs. Stand-alone Cages In A Cadaver Model

Robert McGuire; Abeer Al-Barghouthi; Wood Dale; Loren Latta; Francesco Travascio

Poster No. 1830

The Effect Of Posterior Lumbar Spinal Surgery On Passive Stiffness Of Rat Paraspinal Muscles 13 Weeks Post-surgery

Shun Yamamoto; Thomas R. Oxland; Masoud Malakoutian; Marine Theret; Fabio Rossi; Stephen H.M Brown; John Street

Poster No. 1831

Poly(propylene Fumarate) Augmentation Of Metastatic Spines Restores Mechanical Properties Comparable To Intact Vertebrae: A Cadaveric Study

Asghar Rezaei; Hugo Giambini; Lee Miller; Hao Xu; Haocheng Xu; Michael J. Yaszemski; Lichun Lu

Poster No. 1832

Sagittal Spinopelvic Alignment In Asian Patients With Hip Osteoarthritis

Hirohito Hirata; Tadatsugu Morimoto; Toshihiro Nonaka; Tomohito Yoshihara; Motoki Sonohata; Masaaki Mawatari

Poster No. 1833

Anatomical Relation Of Cervical Posterior Longitudinal Ligament And Nerve Root For C5 Palsy

Yoshitada Usami; Atsushi Yokota; Yoichi Kondo; Masashi Neo

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Cyclic Micro-Indentation And Molecular Composition Of The Endplate
Serkan Inceoglu; Mustafa Unal; Jeffrey Nyman; Ozgul Yasar-Inceoglu;
Wayne Cheng; Olumide Danisa

Poster No. 1835

A Morphological Analysis Of The Intervertebral Foramen And The Lumbar
Facet Joint
Masahiro Kashima; Koichi Sairoyo; Hirofumi Takami

Poster No. 1836

Conformity And Stress Distribution Of The Auricular Surfaces With
Simulated Loading In Patients With Sacroiliac Joint Pain: A Finite
Element Analysis Using CT-based 3-dimensional Models
Kazuya Ito; Tsuyoshi Morito; Kazuyoshi Gamada

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Development Of Anatomically Representative Endplate Models To Assess
Interbody Cage Subsidence Risk And The Impact Of Cage Width
Guy Fogel; Kelsey Tara; Nicholas Martin; Jeremy Malik; Yun Peng;
Michael Jekir

Poster No. 1838

Modulus XLIF With A Stress-optimized Body Lattice And Microporous
Endplates Can Reduce Subsidence Risk
Guy Fogel; Nicholas Martin; Jesse Unger; Yun Peng; Michael Jekir

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Six-degree-of-freedom Vertebral (C1-T1) Kinematics Of The Cervical
Spine Of Asymptomatic Subjects During Gait
Chaochao Zhou; Haiming Wang; Cong Wang; Tsung-Yuan Tsai; Yan Yu;
Peter Ostergaard; Guoan Li; Thomas Cha

Poster No. 1840

In-vivo Deformation Of The Spine Canal Before And After Surgical
Corrections Of Severe And Rigid Kyphoscoliosis
Chaofan Han

PS2-092

Spine—Surgical and Non-Surgical Interventions

Poster No. 1841

Does Thoracoplasty Improve 3D Back Contour Of Adolescent Idiopathic
Scoliosis Patients?
Jonathan C. Horng

Poster No. 1842

Patient-specific Predictors For Responsiveness To Sacroiliac Joint
Injections: A Retrospective Study
Rahul S. Chandrupatla; Bahar Shahidi; Kelly Bruno; Jeffrey L. Chen

Poster No. 1843

Optimal Patient-specific Surgery Planning For Adolescent Idiopathic
Scoliosis: Case Study With Sensitivity Analysis
Luigi La Barbera; A. Noelle Larson; Jeremy Rawlinson; Carl-Eric Aubin

Poster No. 1844

Teriparatide And Bisphosphonate Use In Osteoporotic Spinal Fusion
Patients: A Systematic Review And Meta-analysis
Sung Huang Laurent Tsai; Tung-Yi Lin; Ruei-Shyuan Chien; Katie Lichter;
Anshit Goyal; Mohamad Bydon

Poster No. 1845

Effect Of Brace Type On Spine Curvature In Treatment Of Adolescent
Idiopathic Scoliosis
Katherine Lukas; Channing Tassone; Xue-Cheng Liu; John Thometz;
Benjamin Escott; Sergey Tarima

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Effects Of Intraoperative Local Steroid Treatment On Bone Generation In
A Rat Posterolateral Spine Fusion Model
Mark A. Plantz; Tejas Nandurkar; Joseph G. Lyons; Jonathan Paul;
David J. Ellenbogen; Mitchell J. Hallman; Allison C. Greene;
Jonathan T. Yamaguchi; Vivek Shah; Abhishek Kannan; Silvia Minardi;
Soyeon Jeong; Kennedy C. Sana; Chawon Yun; Erin L. Hsu;
Wellington K. Hsu



Poster No. 1847—Guest Nation

Achieving Successful Posterolateral Fusion Using A Collagen
Calcium Phosphate Silicate Bio-ceramic
Rema Oliver; James Crowley; Daniel Wills; Tian Wang;
Michael Dan; John Ward; Daniel Pasqualino; William R. Walsh

Poster No. 1848

Three-dimensional Computerized Tomography Evaluation Of Disc
Height Changes Of Adjacent Segments Following Extreme Lateral
Interbody Fusion
Lyhour Lay; Koji Akeda; Junichi Yamada; Stephanie Adachi;
Pei-Chen Choo; Nozomu Inoue; Koichi Masuda; Akihiro Sudo

Poster No. 1849

An Evaluation Of The Host Response To An Interspinous Process Device
Based On A Series Of Spine Explants
Justin D. Bric; Jeffrey M. Toth

Poster No. 1850

Does Corset Bracing Alter 3D Kinematics Of The Spine During ADL In
Children With Spondylolysis?
Cameron Hays; XueCheng Liu; Shayne Fehr; Ram Haddas

Poster No. 1851

Noninvasive Spinal Stimulation Improves Gait In Long-term
Stroke Survivors
Yaejin Moon; Kelly Mckenzie; Lindsey Yingling; Chaithanya K.
Mummissetty; Taylor Zuleger; Martina Lamberti; Elliot J. Roth;
Richard L. Lieber; Arun Jayaraman

Poster No. 1852

Biomimetic Scaffold For Bone Augmentation And Spinal Fusion

Candice M. Sears; Silvia Minardi; Francesca Taraballi; Fernando Cabrera; Xin Wang; Bradley Weiner; Ennio Tasciotti

Poster No. 1853

The Timing And Incidence Of Surgical Intervention Following Diagnosis Of Lumbar Disc Herniation At Military Treatment Facilities

Ashley Bee Anderson; Matthew J. Braswell; Daniel I. Brooks; Jonathan F. Dickens; Scott C. Wagner

Poster No. 1854

The Effectiveness Of Pre-contoured Titanium Alloy Rods In Inducing Thoracic Kyphosis After Sequential Spinal Releases

Nathaniel R. Ordway; Jinhui Shi; Mike H. Sun; Stephen A. Albanese; Swamy Kurra; William F. Lavelle

PS2-093

Intervertebral Disc—Diseases and Disorders

Poster No. 1855

Cxcl12/cxcr4-dependent Activation Of Nlrp3 Inflammasome In Nucleus Pulposus Aggravates Intervertebral Disc Degeneration

Ziang Xie; Zhiwei Jie; Shunwu Fan; Shunwu Fan

Poster No. 1856

Withdrawn

Poster No. 1857

Mechanobiological Dysfunction Of Disease: Cell Stiffness Decreases With Severity Of Disc Degeneration And Inflammatory Stimulation

Timothy Jacobsen; Hayley Jacobsen; Eric Leung; Venkat Boddapati; Christopher Filippi; Mitchell Levine; Ronald A. Lehman; Nadeen O. Chahine

Poster No. 1858

Characterizing Biomarker Profiles For Degenerative Cervical And Lumbar Intervertebral Discs

Jacob S. Kramer; Aaron M. Stoker; Naomi N. Lee; Chaiyapruk Pundee; Christina L. Goldstein; Don K. Moore; Theodore J. Choma; James L. Cook

Poster No. 1859

Effects Of Cyclic Compression On Intervertebral Disc Metabolism In A Whole Organ Rat Tail Model

Emma C. LePage; Aaron M. Stoker; Theodore J. Choma; James L. Cook

Poster No. 1860

Characterizing Intervertebral Disc Responses To Sustained Pro-inflammatory Cytokine Stimulation

Emma C. LePage; Aaron M. Stoker; Theodore J. Choma; James L. Cook

Poster No. 1861

Characterizing The Basal And Pro-inflammatory Cytokine-induced Metabolic Responses Of Annulus Fibrosus And Nucleus Pulposus

Naomi N. Lee; Aaron M. Stoker; Jacob S. Kramer; Theodore J. Choma; James L. Cook

Poster No. 1862

Pdgf-bb Inhibits Human Disc Cell Apoptosis Through Repression Of Runx1 Expression

Lorenzo Mario Fernandes; Meixue Duan; Nazir Khan; Martha Diaz-Hernandez; Gregory Gibson; Steven Presciutti; Hicham Drissi

Poster No. 1863

Involvement Of Autophagy In Human Herniated And Degenerative Intervertebral Disc Diseases

Takashi Yurube; Yuji Kakiuchi; Masaaki Ito; Ryu Tsujimoto; Yutaro Kanda; Kunihiro Miyazaki; Yoshiki Takeoka; Shingo Miyazaki; Zhongying Zhang; Toru Takada; Kou Tadokoro; Ryosuke Kuroda; Kenichiro Kakutani

Poster No. 1864

Characterization Of Biomarker Profiles For Patients Undergoing Lumbar Discectomy Vs Fusion

Jacob S. Kramer; Aaron M. Stoker; Naomi N. Lee; Chaiyapruk Pundee; Christina L. Goldstein; Don K. Moore; Theodore J. Choma; James L. Cook

Poster No. 1865

Characterizing Biomarker Profiles For Degenerative Intervertebral Discs Stimulated With IL-1 β

Jacob S. Kramer; Aaron M. Stoker; Naomi N. Lee; Chaiyapruk Pundee; Christina L. Goldstein; Don K. Moore; Theodore J. Choma; James L. Cook

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Intervertebral Disc—Growth, Development and Aging

Poster No. 1866

Master Regulator Transcription Factor Identification As A Method For Nucleus Pulposus Cell Differentiation

Jordy Schol; Daisuke Sakai; Hiraishi Syunsuke; Masato Sato; Masahiko Watanabe

Poster No. 1867

Involvement Of Atg5-dependent Autophagy In The Maintenance Of Rat Intervertebral Disc Homeostasis In Vitro And In Vivo Maintenance Of Rat Intervertebral Disc In Vitro And In Vivo

Ryu Tsujimoto; Takashi Yurube; Yuji Kakiuchi; Masaaki Ito; Yutaro Kanda; Kunihiro Miyazaki; Yoshiki Takeoka; Shingo Miyazaki; Zhongying Zhang; Toru Takada; Ryosuke Kuroda; Kenichiro Kakutani

Poster No. 1868

Discoidin Domain Receptor 1 Regulates The Development Of Intervertebral Disc

Chung-Hwan Chen; Shu-Chun Chuang; Yi-Hsiung Lin; Liang-Yin Chou; Chau-Zen Wang

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Poster No. 1869

Hyaluronic Acid Metabolism In Intervertebral Disc Degeneration
Tatsuya Yamamoto

Poster No. 1870

Differentiation Of Human Embryonic Stem Cells Into Notochordal-like Cells For IDD Cell Based Therapy

Martha E. Diaz-Hernandez; Nazir M. Khan; Camila Medrano Trochez; Kimihide Murakami; Peter Maye; Gregory Gibson; Hicham Drissi

Poster No. 1871

Hypoxic Regulation Of Mitochondrial Metabolism And Mitophagy In Nucleus Pulposus Cells Is Dependent On Hif-1 α -bnip3 Axis

Makarand Risbud

Poster No. 1872

Gender And Age-related Effects On Growth Factors Levels In The Nucleus Pulposus

Silvia Daniela Gonzales; Vanessa Baron; Shabnam Namin

Poster No. 1873

Generation And Characterization Of Brachyury Conditional Allele To Elucidate Its Role In Postnatal Mouse Nucleus Pulposus Cells

Chitra L. Dahia

PS2-095

Intervertebral Disc—Injury and Healing

Poster No. 1874

Inflammatory Cytokine And Catabolic Enzyme Expression In A Goat Model Of Intervertebral Disc Degeneration

Chenghao Zhang; Thomas P. Schaer; Sarah E. Gullbrand; Zhirui Jiang; Yian Kai Lau; Dawn M. Elliott; George R. Dodge; Robert L. Mauck; Neil R. Malhotra; Lachlan J. Smith

Poster No. 1875

Disc Degeneration, Inflammation And Subjective Morphine-induced Relief Of Chronic Back Pain In Rats

Bo Yuan; Jun Li; Amanda L. Persons; Brandon Williams; Di Chen; Ana Chee; T. Celeste Napier; Howard S. An

Poster No. 1876

Peripheral Nervous System Gene Expression In Two Pain Transduction Pathways After Intervertebral Disc Injury

Grace E. Mosley; Minghui Wang; Bin Zhang; James C. Iatridis

Poster No. 1877

Aging Attenuates Disc Degeneration Induced By Compression By Suppressing Serpina1/Camkk1 In Part Via Canonical Wnt Signaling

Neharika Bhadouria; Tori Kroon; Marina Zieger; Chris Mueller; Uma Sankar; Nilsson Holguin

Poster No. 1878

Tissue Engineered Intervertebral Discs Show Optimal Fiber Formation And Enhanced Mechanical Properties At Sub-physiologic Levels Of Glucose

Marianne Lintz; Lawrence J. Bonassar

Poster No. 1879

Comparison Of Biomarker Production By Annulus Fibrosus From Non-chondrodystrophic And Chondrodystrophic Canine Intervertebral Discs

Naomi N. Lee; Aaron M. Stoker; Jake S. Kramer; Theodore J. Choma; James L. Cook

PS2-096

Intervertebral Disc—Structure, Function and Mechanics

Poster No. 1880

Inflammatory Cytokines Induced By Sustained Loading Of The Lumbar Intervertebral Disc Is Attenuated By Trpv4 Inhibition In Culture

Garrett Easson; Chia-Lung Wu; Farshid Guilak; Simon Tang

Poster No. 1881

Characterization Of The Human Intervertebral Disc Cartilage Endplate

Katherine Lakstins; Gilian Gunsch; Lauren Arnold; David Flanagan; Safdar Khan; Nikhit Gadde; Blain Jones; Gunjan Agarwal; Devina Purmessur

Poster No. 1882

Elucidating The Role Of Tenomodulin On Intervertebral Disc Biomechanical Function

Theodor Di Pauli von Treuheim; Olivia Torre; Angelica Abbondandolo; Manuel Delgado Caceres; Denitsa Docheva; James Iatridis

Poster No. 1883

The Effects Of Hypoxia And Glucose Deprivation On Gene Expression Of Glucose Transporters (GLUTs) In Intervertebral Disc Cells

Xue Yin; Valeria Londono; Weiyong Gu; C.-Y. Huang

Poster No. 1884

Comparison Of MRI Techniques As Tools To Evaluate Spinal Pathology

Morgan Giers; Sonia Ahrens; Liudmila Bardonova; Vadim Byvaltsev

Poster No. 1885

ATP Binding To Porcine Intervertebral Disc Tissues

Xue Yin; Oraya Vesvoranan; Fotios Andreopoulos; Edward Dauer; C.-Y. Huang

Poster No. 1886

Resistin Promotes Intervertebral Disc Degeneration Through Up-regulating Serglycin Induced Nucleus Pulposus Cells Apoptosis

Jianru Wang; Fan Chen; Zemin Li; Zhaomin Zheng

PS2-097 **Intervertebral Disc – Treatment and Therapeutics**

Poster No. 1887

Transcriptome Analysis Of CRISPRa-driven De Novo Ecm Deposition In Human Adipose Derived Stem Cells
Niloofer Farhang; Jacob Weston; Bryton Davis; Matthew Ginley-Hidinger; Jay Gertz; Robert Bowles

Poster No. 1888

Non-viral Transfection Of Human Nucleus Pulposus Cells With FOXF1 Induces Reprogramming To A Healthy Pro-anabolic Phenotype
Nina Shirley Tang; Ana I. Salazar-Puerta; Justin A. Richards; Safdar Khan; Judith Hoyland; Daniel Gallego-Perez; Benjamin Walter; Natalia Higuera-Castro; Devina Purmessur

Poster No. 1889

Flexible 3D Printed Scaffolds And Cell-Seeded Alginate To Recapitulate The Complex Biomechanical Properties Of Intervertebral Disc
Samantha L. Marshall; Timothy D. Jacobsen; Kevin Anton; Archana Murali; Nadeen O. Chahine

Poster No. 1890

Regenerative Potential Of Isolated Human Nucleus Pulposus Cells Under Reproduced Physiological Stresses
Yoshiki Takeoka; James D. Kang; Shuichi Mizuno

Poster No. 1891

Multiplex Epigenome Editing Of Sensory Neuron Ion Channels Abolished Degenerative Ivd-induced Mechanical Nociception
Joshua D. Stover; Brandon Lawrence; Jared L. Zitnay; Jeffrey Weiss; Robby D. Bowles

Poster No. 1892

Antioxidant Effects Of Amobarbital And N-acetylcysteine To Prevent Intervertebral Disc Degeneration
Dongrim Seol; Mitchell Coleman; Ino Song; Sonja Smith; Douglas Fredericks; Emily Petersen; Tae-Hong Lim; James A. Martin

Poster No. 1893

IL-1 β And Cathepsin-D Modulate Cellular Terminal Complement Complex Formation In Human Disc Tissue
Zhiyao Yong; Graciosa Q. Teixeira; Amelie Kuhn; Michael Ruf; Uwe M. Mauer; Anita Ignatius; Rolf Brenner; Cornelia Neidlinger-Wilke

Poster No. 1894

Angiotensin II Receptor Antagonist Inhibits Tnf α Induced Degeneration Process In Human Nucleus Pulposus Cells
Zhen Li; Judith Pfannkuche; David Kubosch; Norbert Südkamp; Mauro Alini; Sibylle Grad; Gernot Lang

Poster No. 1895

Effect Of Spine-derived Materials On Tumor Necrosis Factor- α -induced Inflammation In Nucleus Pulposus Cells
Jonathan Messer; Tania del Rivero; Shabnam Namin

PS2-098 **Knee – Diagnostics**

Poster No. 1896

Utilizing Synovial Fluid Biomarkers To Distinguish Radiographic Osteoarthritis Severity
Ishita Patel; Aaron M. Stoker; James A. Keeney; Emily V. Leary; James L. Cook

Poster No. 1897

Correlation Of Synovial Fluid, Serum, And Urine Biomarker Concentrations From Patients With Knee Osteoarthritis
Ishita Patel; Aaron M. Stoker; James A. Keeney; James L. Cook

Poster No. 1898

Knee Joint Acoustic Emissions As A Non-invasive Biomarker Of Meniscal Tears
Daniel C. Whittingslow; Hyeon-Ki Jeong; Nicholas Bolus; Jason Boyd; Jennifer Lee Hunnicutt; Regina Hash; Omer T. Inan; John W. Xerogeanes

Poster No. 1899

Arthrometer For Quantifying Translational And Rotational Laxity Of The Knee: Reliability And Safety Assessment
Carl W. Imhauser; Hamidreza Jahandar; Zaid Zayyad; Thomas Fraychineaud; Jennifer Vazquez; Andrew D. Pearle; Danyal H. Nawabi; Thomas L. Wickiewicz

Poster No. 1900

Is ACL Size Becoming Smaller With Aging? MRI Evaluation Of Age-related Differences In Anterior Cruciate Ligament Size
Takanori Iriuchishima; Bunsei Goto; Freddie H. Fu

Poster No. 1901

Radial Projected Femoral Cartilage Area By Automatic Cartilage Segmentation For The Knee MRI
Akinobu Hyodo; Nobutake Ozeki; Hayato Aoki; Mitsuru Mizuno; Koji Otabe; Hisako Katano; Kenji Suzuki; Jun Masumoto; Ichiro Sekiya

Poster No. 1902

Molecular Pathology Of Human Knee Arthrofibrosis As Defined By RNA Sequencing
Banu Bayram; Afton K. Limberg; Christopher G. Salib; Jacob W. Bettencourt; William H. Trousdale; Eric A. Lewallen; Nicolas Reina; Christopher R. Paradise; Roman Thaler; Mark E. Morrey; Joaquin Sanchez-Sotelo; Daniel J. Berry; Andre J. van Wijnen; Matthew P. Abdel

Poster No. 1903

Deep Learning-based Diagnosis Of Knee Osteoarthritis Based On The Kellgren And Lawrence Quantification System
Sang Won Lee; Andrew F. Laine; Sangmin Lee; Helen H. Lu; Joon Kyu Lee

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Poster No. 1904

Predicting Radiographic Knee Osteoarthritis Development Within 4 Years Using Mr T2 Mapping (The Importance Of T2 Values 80-110 Ms Around The Osteophyte In The Medial Femoral Condyle)
Hiorshi Watanabe; Kenji Takahashi; Sanshiro Hashimoto; Futoshi Ikuta; Shinro Takai

PS2-099

Knee—Growth, Development and Aging

Poster No. 1905

The Correction Loss Of Coronal Alignment In Open Wedge High Tibial Osteotomy With Navigation System
Masaki Tsuji; Naomi Kobayashi; Yohei Yukizawa; Oishi Takayuki; Shu Takagawa; Yutaka Inaba

Poster No. 1906

Evaluation Of Growth Disturbance Following Anterior Cruciate Ligament Reconstruction Using Transphyseal Technique In Patients With Distal Femur Growth Plate Opening
Yoshinobu Ichino; Takahiro Ogura; Tatsuya Takahashi; Hideaki Fukuda; Shigehiro Asai; Hiroki Sakai; Izumi Kanisawa; Ichiro Yamaura; Akihiro Tsuchiya; Kenji Takahashi

PS2-100

Knee—Injury and Healing

Poster No. 1907

Risk Factors Of Re-injury After Double Bundle Anterior Cruciate Ligament Reconstruction With Hamstring Grafts In Younger Patients
Takahiro Igarashi; Sadami Toyoshima; Taku Nakajima; Akemi Suzuki; Yuya Takakubo; Atsushi Narita; Michiaki Takagi

Poster No. 1908

Novel Pre-clinical Model Of Post-traumatic Osteoarthritis Demonstrates Unicompartamental Declines In Trabecular Bone Volume
Lindsey K. Lepley; McKenzie S. White; Steven M. Davi; Adam S. Lepley; Ross J. Brancati

Poster No. 1909

Optimization Of Return-to-duty Protocols After Knee Injury
Kimi D. Dahl; Sarah A. Wilson; Kristin M. Dunford; Luke O'Brien; Matthew Provencher; Scott Tashman

Poster No. 1910

Histopathologic Characterization Of Synovial Biopsies From Clinical Canine Patients With Cranial Cruciate Ligament Disease
Keiichi Kuroki; Ned Williams; James L. Cook

Poster No. 1911

An Improved T₂*-based Prediction Model For ACL Failure Load
Sean W. Flannery; Jillian E. Beveridge; Ata M. Kiapour; Naga Padmini Karamchedu; Analicia L. Behnke; Benedikt L. Proffen; Jakob T. Sieker; Martha M. Murray; Braden C. Fleming

Poster No. 1912

Distribution Of Bone Contusion Patterns In Acute Noncontact ACL Torn Knees

Sophia Y. Kim-Wang; Melissa B. Scribani; Michael B. Whiteside; Tally E. Lassiter; Louis E. DeFrate; Jocelyn R. Wittstein

Poster No. 1913

The Effect Of Anesthesia Type On 30-day Complications And Length Of Stay Following Total Knee Arthroplasty
Lauren L. Nowak; Emil H. Schemitsch

Poster No. 1914

Difference Between The Medial And Lateral Gaps At The 90° Flexion Position Predicts Knee Kinematics In Total Knee Arthroplasty
Shin Masuda; Shinichi Miyazawa; Takayuki Furumatsu; Yoshiki Okazaki; Yuya Kodama; Takaaki Hiranaka; Yuki Okazaki; Toshifumi Ozaki

Poster No. 1915

An Updated Analysis Of Return To Play Rates In NFL Wide Receivers And Running Backs After ACL Reconstruction
Aditya Manoharan; Dane Barton; Ansab Khwaja

Poster No. 1916

Is Revision Total Knee Arthroplasty Surgery For Periprosthetic Joint Infection Associated With Higher Re-revision Rate Compared To Revision For Aseptic Loosening And Instability?
Wenhao Chen; Liang Xiong; Christian Klemm; Janna van den Kieboom; Venkatsaikhil Tirumala; Ruben Oganessian; Paul Walker; Young-Min Kwon

Poster No. 1917

Video Fluoroscopic Gait Analysis Of A Rat TKA Model
Yuliya M. Kulyomina; Mikhail Gurevich; Justice Achonu; Emily Penna; Lindsey Douglas; Martha P. Kanjiya; Martin Kaczocha; David E. Komatsu; Sardar M. Zia Uddin

Poster No. 1918

Deficient Hierarchy In The Postural Balance After ACL Reconstruction Surgery And The Role Of Mechanical Noise Vibration In Restoring It
Payam Zandiyeh; Jessica Kupper; Nicholas G.H. Mohtadi; Peter Goldsmith; Janet L. Ronsky

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Knee—Structure, Function and Mechanics

Poster No. 1919

In-vivo Knee Kinematics In Patients With Medial-pivot Total Knee Arthroplasty During Lunge
Diyang Zou; Zhi Ling; Nan Zheng; Jiaqi Tan; Yunsu Chen; Tsung-Yuan Tsai



Poster No. 1920—Guest Nation

Biomechanical Differences Between Healthy, Osteoarthritic And Post-Operative Medial Stabilized Knees

Danè Dabirrahmani; Hamed Shahidian; Joseph Cadman; Lauren Kark; James Sullivan; Richard Appleyard

Poster No. 1921

Nanomechanical Signatures Of Nascent Matrix In Embryonic Cartilage And Meniscus

Bryan Kwok; Prashant Chandrasekaran; Chao Wang; Eiki Koyama; Nathaniel A. Dymant; Robert L. Mauck; Lin Han

Poster No. 1922

Mechanical Properties And Influence On Tendon Tissue Of Suspensory Fixation Device In Ligament Reconstruction

Toshiya Kano; Masakazu Ishikawa; Hiroki Ogawa; Hiroyuki Akebono; Atsushi Sugeta; Nobuo Adachi

Poster No. 1923

Influence Of Tibial Tuberosity Position And Trochlear Dysplasia On Patellar Tracking Vary With Alta

Keegan T. Conry; Andrew J. Cosgarea; Miho J. Tanaka; Brett L. Flesher; John J. Elias

Poster No. 1924

The Optimization Of Ply Angle Of Composite Scaffold For Cartilage Regeneration Of Knee Joint Osteoarthritis

Yong-Gon Koh; Jin-Ah Lee; Kyoung-Tak Kang

Poster No. 1925

Elevated Tnf- α , Reduced Knee Loading And Increased Ute-t2* 2 Years Post ACL Reconstruction: A Signal For Knee Oa In A Subset Of Patients

Arielle G. Fischer; Matthew R. Titchenal; Ashley A. Williams; Eleonora Migliore; Jessica L. Asay; Jennifer C. Erhart-Hledik; Thomas P. Andriacchi; Constance R. Chu

Poster No. 1926

Modified Gap Technique For Total Knee Arthroplasty (TKA) In Rheumatoid Arthritis

Satomi Abe; Hiroshi Ito; Yusuke Sasaki

Poster No. 1927

Patient-specific Musculoskeletal Models As A Framework For Comparing ACL Function In Unicompartmental Vs. Bicruciate Retaining Arthroplasty

Qida Zhang; Zhongmin Jin; Orhun K. Muratoglu; Kartik M. Varadarajan

Poster No. 1928

Changes In Relative Contributions Of Each Moment Components At The Knee According To Severity Of Osteoarthritis

Yuki Suzuki; Yasumitsu Ohkoshi; Kensaku Kawakami; Kenta Shimizu; Kengo Ukishiro; Tomohiro Onodera; Koji Iwasaki; Kou Suzuki; Tatsunori Maeda; Shoji Suzuki; Eiji Kondo; Norimasa Iwasaki

Poster No. 1929

In-vivo Elongation Of The Posterior Cruciate Ligament In Cruciate Retaining Total Knee Arthroplasty During Functional Activities

Paul Oganessian; Janna van den Kieboom; Christian Klemt; Venkatsaikhil Tirumala; Paul Walker; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Young-Min Kwon

Poster No. 1930

Investigation Of Isoheight Characters Of The Femoral Condyle During In-vivo Weightbearing Flexion Of The Knee—Implication To Gap Balancing Of Total Knee Arthroplasty

Zhitao Rao; Chaochao Zhou; Qidong Zhang; Willem Kernkamp; Jianping Wang; Liming Cheng; Timothy Foster; Hany Bedair; Guoan Li

Poster No. 1931

Influence Of Posterior Femoral Component Configuration On Postoperative Knee Laxity In Bi-cruciate Retaining Total Knee Arthroplasty

Yasuraku Shibata

Poster No. 1932

Capturing Shape And Material Property Variation In The Proximal Tibia

Riza Bayoglu; Nicholas Nelson; William Fugit; Chadd W. Clary; Paul Rullkoetter; Peter J. Laz

Poster No. 1933

Inflammatory Cell- Induced Corrosion (icic) Vs. Electrocautery Induced Damage Of Total Knee Implants

Griffin M. Heise; Christina Arnholt; Jameson Sorrels; Brian Morrow; Steven Kurtz; William Mihalko

Poster No. 1934

Clinical Representation Of Joint Coordinate System Forces

Callan Gillespie; Tara Nagle; Robb Colbrunn

Poster No. 1935

Kinematic Analysis Of Condylar Stabilized Vs Cruciate Retaining Total Knee Arthroplasty During Stair Ascent

Teruya Ishibashi

Poster No. 1936

Does Medial-pivot Total Knee Arthroplasty Reproduce The Medial Pivot Pattern During Gait?

Nan Zheng; Diyang Zou; Jiaqi Tan; Yunsu Chen; Tsung-Yuan Tsai

Poster No. 1937

Experimental Assessment Of PCL Forces With Different Implant Systems And The Effect On Tibial Fixation

Brittany Marshall; Yashar Behnam; David Dalury; David Fisher; Chadd Clary

Poster No. 1938

Across Group Comparison Of Knee Ligament Recruitment Probability

William Zaylor; Jason P. Halloran

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Poster No. 1939

Does Contemporary Bicruciate Retaining Total Knee Arthroplasty Restore The Native Knee Kinematics? A Systematic Review Of In-vitro Cadaveric Investigations

Yun Peng; Shuai An; Chaochao Zhou; Hany Bedair; Guoan Li

Poster No. 1940

Performances Comparison Between Stretchable And Flexible Sensors For Measuring Knee Range Of Motion

Filippo Zigliani; Aaron Kavanaugh; Joana De Castro Capacete; Laura Gastaldi; Fabrizio Billi

Poster No. 1941

Validity Of Measuring The Width And Volume Of Medial Meniscal Extrusion Using An MRI-derived Three-dimensional Tibial Model

Goro Watanabe; Kenji Hoshi; Yasuo Kurose; Kazuyoshi Gamada

Poster No. 1942

Subject-specific Computational Modeling Of Human Patellofemoral Joint Motion For Routine Clinical Practice

Jeffrey Hartanto; Wee Kheng Leow; Andy KS Yew; Joyce SB Koh; Tet Sen Howe

Poster No. 1943

Aerobic Capacity And Fatigability Are Associated With Physical Activity In People With Knee OA

Kharma Foucher; Burcu Aydemir; Chun-Hao Huang

Poster No. 1944

Different Kinematics Of Floor-sitting Activities After Total Knee Arthroplasty

Toshifumi Watanabe; Akino Aoki; Kenji Hoshi; Kazuyoshi Gamada; Yusuke Nakagawa; Koji Otabe; Hiroki Katagiri; Hideyuki Koga; Ichiro Sekiya; Takeshi Muneta; Tetsuya Jinno

Poster No. 1945

Assessment Of Tibial Implant Fit Between Two Partial Knee Arthroplasty Designs

Yifei Dai; Andrew Jensen; Andrea Gardner; Michael Ragan

Poster No. 1946

Healthy And Osteoarthritic Knees Show Significant Differences In Tibiofemoral Rotation And Anterior-posterior Translation During Twisting

Masato Kiyohara; Satoshi Hamai; Hirotaka Gondo; Hidehiko Higaki; Satoru Ikebe; Tetsuro Ushio; Koji Murakami; Yasuhiro Nakashima

Poster No. 1947

The Effect Of Graft Augmentation With MCL Suture Repair On Medial Tissue Forces In Combined ACL And Grade 3 MCL Injury

Tomomasa Nakamura; Taylor M. Price; Michael A. DiNenna; Monica A. Linde; Carola F. van Eck; Patrick Smolinski; Freddie H. Fu

Poster No. 1948

Serum Cartilage Oligomeric Matrix Protein Responses To A Mechanical Stimulus Are Associated With Loading During Gait In Individuals With Anterior Cruciate Ligament Reconstruction

Jennifer Erhart-Hledik; Matthew Titchenal; Eleonora Migliori; Jessica Asay; Thomas Andriacchi; Constance Chu

Poster No. 1949

Anatomical And Morphological Analysis Of The Distal Posterior Femoral Condyles In The Normal Knee

Sho Hokari; Osamu Tanifuji; Koichi Kobayashi; Tomoharu Mochizuki; Ryota Katsumi; Takashi Sato; Naoto Endo

Poster No. 1950

Coronal Laxity And Range Of Motion In Mobile-bearing TKA

Yoshinori Ishii; Hideo Noguchi; Junko Sato

Poster No. 1951

Relationship Of Knee Flexion Angle And Sagittal Spinopelvic Alignment In Patients With Knee Osteoarthritis

Ryota Katsumi; Simon C. Mears; Jeffrey B. Stambough; Paul K. Edwards; C. Lowry Barnes; Erin M. Mannen

Poster No. 1952

Open Knee(s)—Generation 2: A Virtual Specimen Cohort For Computational Knee Biomechanics

Snehal K. Chokhandre; Ariel Schwartz; Ahmet Erdemir



Poster No. 1953—Guest Nation

Stair Negotiation Biomechanics Of Medial Stabilizing Knees—Biomechanical And Patient Reported Outcomes

Danè Dabirrahmani; Joseph Cadman; James Sullivan; Richard Appleyard

Poster No. 1954

Developing A Test Method For Patella Trauma Devices

Ryan J. DeWall; David N. Kaimrajh; Michael Bushelow

Poster No. 1955

MCL Repair And Internal Bracing—A Biomechanical Study

Tomomasa Nakamura; Taylor Price; Monica Linde; Patrick Smolinski; Carola F. van Eck

Poster No. 1956

Differences Of Knee Biomechanics During Gait Among Unicompartmental Knee Arthroplasty, Posterior Stabilized And Bi-cruciate Stabilized Total Knee Arthroplasties

Kohei Nishizawa; Kengo Harato; Yu Iwama; Takeshi Hashimoto; Toshiro Otani; Yasuo Niki; Takeo Nagura

Poster No. 1957

Malrotated Femoral Component In Patellofemoral Arthroplasty Causes Abnormal Kinematics Of The Patella

Mutsumi Watanabe; Shinichi Kuriyama; Shinichiro Nakamura; Kohei Nishitani; Hiromu Ito; Shuichi Matsuda

Poster No. 1958

Analysis Of Friction In Knee Prosthesis During A Full Gait Cycle
Matus Ranusa; Markus A. Wimmer; Spencer Fullam; Ivan Křupka

Poster No. 1959

Pivot-shift Negative Knees After ACL Reconstruction Could Have An Overconstraint In Anteroposterior Laxity Which Was Detected By An Electromagnetic Pivot-shift Measurement
Akiyoshi Mori

Poster No. 1960

Influence Of Aging, Physique And Bone Metabolism To Configuration Of The Femoral Shaft And Tibial Articular Surface
Ryuji Nagamine; Kang-il Kim; Makoto Kawasaki; Weijia Chen; Yuan Ma; Akinori Sakai; Toru Suguro

Poster No. 1961

Effect Of Fibula Osteotomy To The Knee Joint In High Tibial Osteotomy
Osamu Tanifuji; Tomoharu Mochizuki; Yoshio Koga; Yasuyuki Tomiyama; Yuji Tanabe; Naoto Endo

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Knee – Surgical and Non-Surgical Interventions

Poster No. 1962

Short-term Clinical Outcomes And Component Placement Accuracy Following Robot Arm Assisted Versus Conventional Total Knee Arthroplasty
Trevor Staub; Jeffrey Jancuska; Nickolas Van Roekel; Michael Colber-Lichter; Scott Nodzo; Sridhar Rachala

Poster No. 1963

Preoperative Soft Tissue Laxity Around Knee Was Associated With Less Accurate Alignment Correction After Hybrid Closed-wedge High Tibial Osteotomy
Shu Takagawa; Naomi Kobayashi; Yohei Yukizawa; Takayuki Oishi; Masaki Tsuji; Yutaka Inaba

Poster No. 1964

Experimental Measurements Of Femoral Primary Stability In Two Cementless Posterior-stabilized Knee Implants
Thomas Anijs; David Wolfson; Mark Heldreth; Nico Verdonschot; Dennis Janssen

Poster No. 1965

The Relationship Between Femoral ACL Tunnel Placement And The Blumensaat's Line Morphology
Takanori Iriuchishima; Bunsei Goto; Freddie H. Fu

Poster No. 1966

Mitigating Pro-inflammatory Responses Of Meniscus With Hyperosmolar Saline
Lasun O. Oladeji; Aaron M. Stoker; James P. Stannard; James L. Cook

Poster No. 1967

Flexible Intramedullary Nailing Of Length Unstable Pediatric Femur Fractures: 3-D Biomechanical Analysis Of Traditional Antegrade And Retrograde Configurations Versus An Updated Retrograde Nail Configuration
Emmanouil Grigoriou; Ameya H. Deshpande; Allison Binkley; Mark Ehrensberger; Jeremy Doak

Poster No. 1968

Withdrawn

Poster No. 1969

Controlled-release Of Blebbistatin After Capsulectomy To Prevent Recurrence Of Joint Contracture
Edward A. Sander; Sathivel Chinnathambi; Jaison Marks; Timothy P. Flower; Aliasger K. Salem

Poster No. 1970

Biomechanical Analysis Of An Adjustable Cortical Fixation Device For Quadriceps Tendon Repair: A Cadaveric Study
Heath P. Gould; William R. Rate; Pooyan Abbasi; Katherine L. Mistretta; Valerie X. Carbajal; Jason W. Hammond

Poster No. 1971

Risk Of Revision For Instability In Cruciate Retaining Or Posterior Stabilized Implants In Primary Total Knee Arthroplasty
Wenhao Chen; Liang Xiong; Christian Klemm; Janna van den Kieboom; Venkatsaiah Tirumala; Ruben Oganessian; Paul Walker; Young-Min Kwon

Poster No. 1972

How Is TKA Femoral Component Overhang Influenced By The Intramedullary Rod?
Ronald Connors-Ehlert; Emily Hampp; Ravi Goyal; Kirby Hitt; Ormonde Mahoney

Poster No. 1973

5 Year Follow Up Data For Cementless Total Knee Arthroplasty Patients
Rachel Sanislo Silverstein; Nathaniel Rawicki; Steven Zelicof

Poster No. 1974

Variable Response To PRP Treatment Correlates To Adaptions In Knee Loading During Gait At A 1 Month Follow-up
Jennifer Erhart-Hledik; Gordhan Mahtani; Jessica Asay; Holly Burt; Michelle Nguyen; Bao Do; Thomas Andriacchi; Constance Chu

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Poster No. 1975

A Novel Concept Of Tibial Condylar Valgus Osteotomy For Medial Knee Instability In Medial Knee Osteoarthritis

Yasushi Oshima; Nobuyoshi Watanabe; Toru Takeoka; Yoshihiro Mizuno; Atsushi Okubo; Tadahiko Yotsumoto; Norishige Iizawa; Tokifumi Majima; Shinro Takai

Poster No. 1976

The Effect Of Coronal And Axial Femoral Component Rotation On Midflexion Laxity And Patient Reported Outcomes In Total Knee Arthroplasty

Edgar A. Wakelin; Sami Shalhoub; Jeffrey M. Lawrence; John M. Keggi; Amber L. Randall; Corey E. Ponder; Jeffrey H. DeClaire; Jan Koenig; Christopher Plakos

Poster No. 1977

Early Clinical And Patient-reported Results Of A Bi-cruciate Retaining Total Knee Implant: Six-month Results Of A Prospective Multicenter Study Of 149 Primary TKAs

Branko Kopjar; Ran Schwarzkopf; James MacDonald; Tad Gerlinger; William Huang; Michael Swank; Thomas Huff; Mark Schinsky; Nirav Amin; Michael Ast; Michael Ries; Martin Roche; Jackson Jones; Herbert Cooper

Poster No. 1978

Lateral Extra-articular Tenodesis Can Reduce ACL Graft Force Under Multiplanar Torque

Niv Marom; Herve Ouanezar; Hamidreza Jahandar; Zaid Zayyad; Thomas Fraychineaud; Ho Bin Kim; Thomas Wickiewicz; Andrew Pearle; Danyal Nawabi; Carl Imhauser

Poster No. 1979

Does Intermittent Catheterization For Urinary Retention Decrease Lengths Of Stay In Total Knee Arthroplasty Patients?

Peter Gold; Luke Garbarino; Hiba Anis; Nipun Sodhi; Terence Ng; Jaime Heimroth; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Michael Mont

Poster No. 1980

Quantifying The Forces Applied During Intraoperative Gap Assessment In Total Knee Arthroplasty

Shady Elmasry; Peter Sculco; Timothy Wright; Andrew Pearle; Michael Cross; David Mayman; Cynthia Kahlenberg; Geoffrey Westrich; Carl Imhauser

Poster No. 1981

Assessment Of Fixation Strength And Stress Shielding Of An All-polymer Poly-ether-ether-ketone (peek) Femoral Component In Total Knee Arthroplasty

Shaan Deepak Sadhwani; Dyana Picache; Dennis Janssen; Lennert de Ruiter; Kary Rankin; Adam Briscoe; Nico Verdonchot; Asit Shah

Poster No. 1982

Effect Of Femur Derotational Osteotomy On Knee Joint Contact Mechanics

Rajshree Hillstrom; Oliver J. Morgan; Mark Lenhoff; Nuno A. Correia; Andreas Kontaxis; Austin Fragomen; S. Robert Rozbruch; Howard Hillstrom

Poster No. 1983

Factors Associated With Worse Outcomes After Open Lysis Of Adhesions (loa) For Treatment Of Stiffness After Primary Knee Arthroplasty

Christian Edmond Awah; Edmund Naami; Awais Hussain; Anshum Sood; Mark Gonzalez

Poster No. 1984

Computational Exploration Of Failure In Total Knee Arthroplasty With Anatomical Patella Replacement

James S. Deacy; Chadd W. Clary; Paul J. Rullkoetter; Douglas A. Dennis; Jacob M. Elkins

Poster No. 1985

Bony Contact Is Essential To Stabilize Lateral Hinge Fracture During Open Wedge High Tibial Osteotomy

Junya Itou; Umuto Kuwashima; Masafumi Itoh; Kitaru Suzuki; Koichi Kuroda; Yasuharu Yokoyama; Mitsuya Urata; Ken Okazaki

Poster No. 1986

A Review Of Rehabilitation Protocols Designated For Medial Patellofemoral Ligament (MPFL) Reconstruction With And Without Tibial Tubercle Osteotomy (TTO)

Reed Coda; Sana G. Cheema; Christina Hermanns; Meghan Kramer; Armin Tarakemeh; John P. Schroepel; Scott Mullen; Bryan G. Vopat; Mary K. Mulcahey

Poster No. 1987

Comparison Of Clinical And Computational Implant Fit Analyses In Partial Knee Arthroplasty

Andrew Jensen; Yifei Dai; Andrea Gardner; Mark Klaassen; Barton Harris; Victor Valderrabano; Raul Marquez; Rocco Papalia; Andrew Pearle

Poster No. 1988

Do Intra-articular Corticosteroid Injections Prior To Total Knee Arthroplasty Increase Postoperative Complication Rates?

David Rhode; Deena Kishawi; Elan Volchenko; Matthew Siegel; Michael Patetta; Anshum Sood; Garrett Schwarzman; Mark Gonzalez

Poster No. 1989

Functional, Spatiotemporal, And Kinematic Outcomes Of Subjects With Modular Knee Arthrodesis

Anna C. Severin; Simon C. Mears; Jeff B. Stambough; Paul K. Edwards; Wesley H. Mayes; C. Lowry Barnes; Brecca M.M. Gaffney; Erin M. Mannen

Poster No. 1990

Correlation Between Clinical And Radiographic Evaluation After MPFL Reconstruction With Elmslie-Trillat Procedure; 1-year Follow-up Study

Kotaro Higa; Keiichi Hagiwara; Atsuko Ogoshi; Shinya Yanagisawa; Hidetoshi Matsuda; Chinatsu Azuma; Kotaro Nishida; Masashi Kimura

Poster No. 1991

Withdrawn

Poster No. 1992

PRP Platelet Counts Correlate With Changes In Pain And Function Following PRP Treatment: Initial Results At 3 Month Follow-up

Jennifer Erhart-Hledik; Eleonora Migliore; Erika Leonardi; Gordhan Mahtani; Holly Burt; Michelle Nguyen; Bao Do; Constance Chu

Poster No. 1993

Wear And Surface Damage Analysis Of The First 100 Antioxidant Tibial Inserts: Quantitative Analysis Differentiates Damage And Wear

Kori C. Jevsevar; John Currier; Barbara H. Currier; Douglas W. Van Citters

Poster No. 1994

Navio™ Robotic Assisted Surgical System For Total Knee Arthroplasty Using Journey™ Ii Guided-motion Total Knee System

Branko Kopjar; Ran Schwarzkopf; James Chow; Joseph Burkhardt; Mark Gittins; Bertrand Kaper; David Fabi; Beate Hanson; Vinay Bhal

Poster No. 1995

Population-based Effect Of Post-operative Alignment On Tibial Bone Remodeling Following TKA

Thomas Anijs; David Wolfson; Mark Heldreth; Nico Verdonshot; Dennis Janssen

Poster No. 1996

How Accurate Are Surgeons In Estimating The Medial And Lateral Gaps In Total Knee Arthroplasty?

Shady Elmasry; Cynthia Kahlenberg; Carl Imhauser; Timothy Wright; Andrew Pearle; Michael Cross; David Mayman; Peter Sculco; Geoffrey Westrich

Poster No. 1997

Trial Of Void: Does The Method Of Urinary Bladder Catheterization Affect Risk Of Urinary Tract Infection Following Total Knee Arthroplasty?

Luke Garbarino; Peter Gold; Hiba Anis; Nipun Sodhi; Max Willinger; Benjamin Schaffler; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Michael Mont

Poster No. 1998

Repairing Lateral Meniscus Tears In Patients With Anterior Cruciate Ligament Reconstruction Ensures Low Rate Of OA Compared To Lateral Meniscectomy At 9-year Follow Up

Kevin D. Plancher; Karen Briggs; Stephanie C. Petterson

Poster No. 1999

Rotational Alignment Of Femoral And Tibial Component And Rotational Mismatch After Total Knee Arthroplasty

Shine Tone; Masahiro Hasegawa; Yohei Naito; Hiroki Wakabayashi; Akihiro Sudo

Poster No. 2000

Comparison Of The Outcome After UKA And HTO In Medial Knee OA By Forgotten Joint Score 12

Shotaro Watanabe; Ryuichiro Akagi; Masashi Shinohara; Hiroaki Hosokawa; Manato Horii; Yoshimasa Ono; Yuya Ogawa; Aya Sadamasu; Satoshi Yamaguchi; Seiji Ohtori; Takahisa Sasho

Poster No. 2001

Effect Of Mindful Meditation On Opioid Consumption Following Primary TKR: A Randomized Control Pilot Study

Ayesha Abdeen; Muzna Ali; Amber M. Parker; Ariel L. Mueller; Balachundar Subramaniam

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Hip – Diagnostics

Poster No. 2002

Is Gluteal Fatty Infiltration On Mars MRI Associated With Poor Outcomes In THA Patients With Adverse Local Tissue Reactions?

Christian Klemt; Venkatsaiakhil Tirumala; Janna van den Kieboom; Ruben Oganessian; Paul Walker; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Young-Min Kwon

Poster No. 2003

Reproducibility Of Pathologic Scoring Systems For Revision Total Hip Arthroplasty

Thomas Bauer; Yaxia Zhang; Madeleine Gao; Julia Sternberg; Bin Lin; Matthew Koff

Poster No. 2004

How Can Patients With Mobile Hips And Stiff Lumbar Spines Be Identified Prior To Total Hip Arthroplasty? A Prospective, Diagnostic Cohort Study

Moritz M. Innmann; Christian Merle; Philippe Phan; Paul E. Beaulé; George Grammatopoulos

Poster No. 2005

Comparison Of Anterior And Posterior Total Hip Arthroplasty Approaches: 3D Mars MRI Analysis Of Morphological Changes Of Gluteal Muscles

Venkatsaiakhil Tirumala; Joseph F. Simeone; Christian Klemt; Wittawat Boonyanuwat; Wenhao Chen; Liang Xiong; Young-Min Kwon

Poster No. 2006

Long-term Mortality Rate Following Aseptic Revision Total Hip Arthroplasty: An Analysis Of 2,087 Hips

Liang Xiong; Wenhao Chen; Christian Klemt; Janna van den Kieboom; Venkatsaiakhil Tirumala; Paul Walker; Ruben Oganessian; Young-Min Kwon

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Poster No. 2007

CT Texture Analysis Of Acetabular Subchondral Bone Can Discriminate Between Normal And Cam Positive Hips In Femoroacetabular Impingement

Taryn Hodgdon; Rebecca E. Thornhill; Nick D. James; Paul E. Beaulé; Andrew D. Speirs; Kawan Rakhra

Poster No. 2008

Outcome Of Re-revision Surgery For Adverse Local Tissue Reaction In Metal-on-Polyethylene And Metal-on-Metal Total Hip Arthroplasty

Bryant Bonner; Paul Arauz; Christian Klemm; Young-Min Kwon

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Hip—Growth, Development and Aging

Poster No. 2009

Withdrawn

Poster No. 2010

Clinical Outcomes Of Hip Arthroscopy Surgery For Middle Aged Patients

Yohei Yukizawa; Naomi Kobayashi; Takayuki Oishi; Shu Takagawa; Masaki Tsuji; Yutaka Inaba

Poster No. 2011

The Use Of Multivariate Functional Principal Component Analysis To Identify Waveform Features Of Gait Biomechanics Related To Hip Osteoarthritis

Koren E. Roach; Valentina Pedoia; Jinhee Lee; Tijana Popovic; Sharmila Majumdar; Richard B. Souza

Poster No. 2012

Changes In Capital Femoral Metaphyseal Fossa Morphology During Skeletal Growth And Maturation

Shayan Hosseinzadeh; Alireza Emami; Young-Jo Kim; Eduardo N. Novais; Ata M. Kiapour

Poster No. 2013

Capital Femoral Epiphyseal Tubercle Shrinks By Increasing Body Mass Index (BMI) In Children

Shayan Hosseinzadeh; Alireza Emami; Young-Jo Kim; Eduardo N. Novais; Ata M. Kiapour

PS2-105

Hip—Injury and Healing

Poster No. 2014

Matrix Metalloproteinase Profiling Of The Labrum In Femoroacetabular Impingement

Jason Schon; Jorge Chahla; Sharada Paudel; Lumanti Manandhar; Tyler Feltham; Johnny Huard; Marc Philippon; Zijun Zhang

Poster No. 2015

Fatigue Testing Of A Locking Plate With Spring-loaded Screws Versus The Three Cannulated Screw Configuration For Femoral Fracture Fixation

Heidi Welch

Poster No. 2016

Epiphyseal Tubercle And Metaphyseal Fossa Mismatch In Slipped Capital Femoral Epiphysis

Shayan Hosseinzadeh; Alireza Emami; Gabriela Portilla; Young-Jo Kim; Eduardo N. Novais; Ata M. Kiapour

Poster No. 2017

Outcomes Of Revision Total Hip Arthroplasty For Vancouver A, B, And C Periprosthetic Femoral Fractures

Janna van den Kieboom; Ruben Oganessian; Venkatsaikhil Tirumala; Paul Walker; John Drago; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Christian Klemm; Young-Min Kwon

Poster No. 2018

Does Method Of Anesthesia Influence Outcome After Hip Fracture Fixation?

Midhat Patel; Lauren L. Nowak; Melanie MacNevin; Michael D. McKee; Emil H. Schemitsch

Poster No. 2019

Analysis Of The Factors Affecting Operative Time And The Impact Of Operative Time On Outcomes Following Surgery For Hip Fractures

Midhat Patel; Lauren L. Nowak; Melanie MacNevin; Michael D. McKee; Emil H. Schemitsch

Poster No. 2020

Risk Factors For Septic Loosening Following Primary Total Joint Arthroplasty

Janna van den Kieboom; Ruben Oganessian; Paul Walker; Venkatsaikhil Tirumala; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Christian Klemm; Young-Min Kwon

Poster No. 2021

The Influence Of Femoroacetabular Impingement On Sacroiliac Motion During Lower Extremity Maneuver In A Cadaver Model

Mei Wang; Robert Jacobs; Jorge Figueras; Linda McGrady; Patrick Birmingham

Poster No. 2022

An Assessment Of Hip Strength, Patient Reported Outcomes, And Plasma Inflammatory Biomarkers After Surgical Correction For Symptomatic Femoroacetabular Impingement

Maxwell Konaris; Lucas Junginger; Elizabeth Sibilsky Enselman; Tristan Maerz; Christopher Mendias; Asheesh Bedi

Poster No. 2023

Comparison Of Risk Of Subtrochanteric Fractures Using The Femoral Neck System, Dynamic Hip Screw, And Cannulated Screw

Dana J. Coombs; Mirco Rocci; This Aebi; David Müller; Michael Bushelow

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Hip—Structure, Function and Mechanics

Poster No. 2024

In Vivo Kinematics, Component Alignment And Hardware Variables Influence On The Liner-to-neck Clearance During Chair-rising After Total Hip Arthroplasty

Kyohei Shiimoto; Satoshi Hamai; Daisuke Hara; Hidehiko Higaki; Hirotaka Gondo; Yifeng Wang; Satoru Ikebe; Kensei Yoshimoto; Keisuke Komiyama; Satoru Harada; Yasuharu Nakashima

Poster No. 2025

Comparison Of Range Of Motion Between Femoroacetabular Impingement And Borderline Developmental Dysplasia Of The Hip Using 3D Dynamic Simulation In Virtual Acetabular Labrum Model

Shota Higashihira; Naomi Kobayashi; Kosuke Sumi; Hyonmin Choe; Taro Tezuka; Masatoshi Oba; Akira Morita; Koki Abe; Yutaka Inaba

Poster No. 2026

Relationship Between Femorotibial Rotation Angle And Patellar Tilting Angle After Total Hip Arthroplasty And The Effect Of Rotational Change On Knee Pain

Daigo Kobayashi; Hyonmin Choe; Naomi Kobayashi; Taro Tezuka; Izumi Saito; Yutaka Inaba

Poster No. 2027

Different Hip Joint Reaction Force Locus In Patients With Symptomatic Cam-type Femoroacetabular Impingement

George Grammatopoulos; Andrew Speirs; Danilo Catelli; Johanna Dobransky; Mario Lamontagne; Paul E. Beaulé

Poster No. 2028

Finite Element Analysis For Evaluation Of Contralateral Proximal Femoral Strength In Patients With Femoral Neck Fracture

Hikaru Ihara; Hyonmin Choe; Naomi Kobayashi; Hiroyuki Ike; Masatoshi Oba; Taro Tezuka; Akira Morita; Koki Abe; Yutaka Inaba

Poster No. 2029

Does Preoperative Sagittal Spinal Parameters Have Influence On Functional Safe Zone After Total Hip Arthroplasty?

Taro Tezuka; Naomi Kobayashi; Hyonmin Choe; Masatoshi Oba; Yushi Miyamae; Akira Morita; Koki Abe; Yutaka Inaba

Poster No. 2030

Effect Of Liner Position And Orientation On Cement Retention Strength Of Metal-in-metal Acetabular Constructs: A Biomechanical Study

Shammodip Roy; Jennifer Peterson; Raga Rajaravivarma; Alison Klika; Carlos Higuera Rueda

Poster No. 2031

A Biomechanical Assessment Of Pullout Forces For Three Cemented Femoral Stems

Lawrence F. Torkan; Anan Zhang; John T. Bryant; Gavin C.A. Wood; Heidi-Lynn Ploeg

Poster No. 2032

Speciation Analysis Of Intra-cellular Metallic Implant Debris Using Synchrotron XRF-imaging

Songyun Liu; Si Chen; Deborah J. Hall; Barry Lai; Stephanie McCarthy; Robin Pourzal

Poster No. 2033

Comparison Of Gait Posture Before And After Total Hip Arthroplasty In Patients With Unilateral Hip Osteoarthritis

Koki Ouchi; Deng Gang; Go Yamako; Koji Totoribe; Etsuo Chosa

Poster No. 2034

Characterising The Acetabular Articular Cartilage/cotyloid Fossa Ratio In The Young Adult Hip: Differentiating Between Dysplasia And Impingement

Zachary William DeVries; Pablo Slullitel; Andrew Speirs; Cheryl Kreviazuk; Johanna Dobransky; Johan Witt; George Grammatopoulos; Paul Beaulé

Poster No. 2035

Mechanical Stretch Induces Ossification Of The Acetabular Labrum

Yoshi Kawamura; Tomonori Tetsunaga; Kazuki Yamada; Tomoaki Sanki; Yoshihiro Sato; Toshifumi Ozaki

Poster No. 2036

Differences In Subchondral Bone Microarchitecture At The Lateral Collapsed Lesion Between Subchondral Insufficiency Fracture And Osteonecrosis Of The Femoral Head

Koichiro Kawano; Goro Motomura; Satoshi Ikemura; Ryosuke Yamaguchi; Shoji Baba; Xu Mingjian; Noriko Yamamoto; Yasuharu Nakashima

Poster No. 2037

Dislocation Is The Leading Cause Of Re-revision Following Aseptic Revision Total Hip Arthroplasty: An Analysis Of 1,629 Hips

Liang Xiong; Wenhao Chen; Christian Klemm; Janna van den Kieboom; Venkatsaiah Tirumala; Ruben Oganessian; Paul Walker; Young-Min Kwon

Poster No. 2038

Is Constrained Liner Effective In Preventing Re-revision Due To Dislocation Following Revision Total Hip Arthroplasty?

Wenhao Chen; Liang Xiong; Christian Klemm; Janna van den Kieboom; Venkatsaiah Tirumala; Ruben Oganessian; Paul Walker; Young-Min Kwon

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Poster No. 2039

Preoperative Factors To Predict Bone Mineral Density Loss Around The Implant After Total Hip Arthroplasty

Akira Morita; Naomi Kobayashi; Hyonmin Choe; Hiroyuki Ike; Masatoshi Oba; Taro Tezuka; Miyamae Yushi; Shota Higashihira; Koki Abe; Yutaka Inaba

Poster No. 2040

The Impaction Resistance Of The Acetabulum In Relation To Bone Quality And The Thickness Of The Medial Wall During Insertion Of A Cementless Cup In Total Hip Arthroplasty: A Biomechanical Study

Tomoaki Sanki; Tomonori Tetsunaga; Yoshi Kawamura; Kazuki Yamadaa; Yasuki Sumasu; Takayuki Inoue; Yoshio Nakashima; Toshifumi Ozaki

Poster No. 2041

Withdrawn

Poster No. 2042

What Are The Patient Factors Associated With Poor Completion Rate Of Patient-reported Outcome Measures Following Revision Surgery?

Christian Klem; Jonathan Yin; Venkatsaiakhil Tirumala; Janna van den Kieboom; Ruben Oganessian; Paul Walker; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Young-Min Kwon

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Hip—Surgical and Non-Surgical Interventions

Poster No. 2043

Assessment Of Material Loss, Damage Modes, And Microstructure Of Severely Damaged THA Femoral Head Tapers

Stephanie M. McCarthy; Deborah J. Hall; Jennifer L. Wright; Brett R. Levine; Hannah J. Lundberg; Robin Pourzal

Poster No. 2044

Validation Of A Finite Element Model Of A Fixation Construct For Vancouver Type B Periprosthetic Femoral Fracture

Xiang Chen; Brittany Marshall; Bryan Fritz; Ryan J. DeWall; Chadd Clary; Paul Rullkoetter

Poster No. 2045

Vertical Femoral Neck Fractures Are Better Stabilized By A Medial Plate Than By A Derotational Screw

Chima D. Nwankwo; Patrick J. Schimoler; Alexander Kharlamov; Victor Greco; Edward R. Westrick; Mark Carl Miller

Poster No. 2046

Increased Postoperative Complications Associated With Upper Gastrointestinal Bleeding Following Total Joint Arthroplasty: A National Study With Propensity-Matched Analyses

Neill Yun Li; Dionne U. Rebello; Daniel S. Yang; John N. Twomey-Kozak; Eric M. Cohen; Alan H. Daniels

Poster No. 2047

The Effect Of Cam Lesion Resection On Femoroacetabular Impingement

Clarissa LeVasseur; Kathleen Inman Fuentes; Milad Zarei; Jessica Brown; Elliot Hammersley; William Anderst; Craig Mauro; Dharmesh Vyas

Poster No. 2048

Shorter-Duration Spinal Anesthesia Using Chloroprocaine Is Associated With Improved Perioperative Outcomes Following Total Joint Arthroplasty

Carl L. Herndon; Roxana Martinez; Nana O. Sarpong; Thomas R. Hickernell; Alexander L. Neuwirth; Jeffrey A. Geller; Roshan P. Shah; H. John Cooper

Poster No. 2049

Biomechanical Characteristics Of Labral Augmentation Versus Labral Reconstruction In A Hip Cadaver Model

Sunikom Suppauksorn; Kevin Parvaresh; Elizabeth Shewman; Jonathan Rasio; Edward Beck; Laura Krivicich; Shane Nho

Poster No. 2050

Mid Term Clinical And Radiographic Outcomes Of A Morphometric Hip Stem Design In Primary Total Hip Arthroplasty Patients

Ahmad Faizan; Ronald Delanois; Arthur Malkani; Frank Kolisek; Charles Jaggard

Poster No. 2051

Complication Rates In Intertrochanteric Fractures: A Database Analysis Comparing Dynamic Hip Screws And Intramedullary Nails

Kunj Jain; Dominick Conguista; Kamil Amer; Michael Vosbikian; Irfan Ahmed

Poster No. 2052

Influence Of Hip Kinematic Perturbations During Walking On Joint Loading In Patients With Acetabular Dysplasia

Brecca Gaffney; Ke Song; Marcie Harris-Hayes; John Clohisy; Michael Harris

Poster No. 2053

Does The Presence Of Contralateral And Ipsilateral Total Hip And Knee Joint Arthroplasty Increase The Risk Of Periprosthetic Fractures?

Janna van den Kieboom; Christian Klem; Venkatsaiakhil Tirumala; Paul Walker; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Ruben Oganessian; Young-Min Kwon

Poster No. 2054

When Operating At Different Institutions, Should An Arthroplasty Surgeon Use The Same Pelvic Supports And An Inclinator?—A Prospective Cohort Study On Implications For Achieving Desired Cup Orientation

Moritz M. Innmann; Johanna Dobransky; Jeroen Verhaegen; Geert Meermans; Christian Merle; Paul E. Beaulé; George Grammatopoulos

Poster No. 2055

Withdrawn

Poster No. 2056

Short-term Outcomes Of A Cementless Wedge Tapered Stem In Modified Anterior Versus Mini-posterior Approach

Christian Curatolo; Kyle Zittel; Keely Boyle; Brian McGrath; Sridhar Rachala

Poster No. 2057

Comparison Of The Effectiveness Of The Posterior Pelvic Tilt And Cam Resection In Femoroacetabular Impingement And Borderline Developmental Dysplasia Of The Hip; A Computer Simulation Study

Haruna Kitayama; Naomi Kobayashi; Shota Higashihira; Yohei Yukizawa; Takayuki Oishi; Hyonmin Choe; Hiroyuki Ike; Taro Tezuka; Akira Morita; Yutaka Inaba

Poster No. 2058

Perioperative And Short-term Outcomes Of Primary Total Hip Arthroplasty Comparing The Direct Anterior Approach And Mini-Anterolateral Approach

Carl L. Herndon; Nathan Drummond; Nana O. Sarpong; Thomas R. Hickernell; Alexander L. Neuwirth; Roshan P. Shah; H. John Cooper; Jeffrey A. Geller

Poster No. 2059

The Learning Curve Of Introducing Direct Anterior Approach For Total Hip Arthroplasty In Practice Using Contemporary Training: Fellowship Following Residency Vs. Mentorship In Experienced Hands

George Grammatopoulos; Joshua Bingham; Lucy Beasley; Johanna Dobransky; Romain Galmiche; Guy Moreau; Jean-Pierre Laflèche; Wade T. Gofton; Paul E. Beaulé

Poster No. 2060

Is Psoriasis Associated With Postoperative Infection Following Total Hip Arthroplasty?

Luke J. Garbarino; Peter A. Gold; Hiba Anis; Nipun Sodhi; Sean Matuszak; Jonathan Danoff; Sreevathsa Boraiah; Vijay J. Rasquinha; Michael Mont

Poster No. 2061

Accelerated Impingement Test Method For Dual Mobility Acetabular Devices

Erik Woodard; Heidi Welch

Poster No. 2062

Outcomes And Complications After Hip Arthroscopy: Labral Debridement Versus Labral Repair

Shin Xu; Gharett M. Heenan; Armin Tarakemeh; Scott Mullen; John P. Schroepel; Bryan G. Vopat

Poster No. 2063

Patients With Higher Elixhauser-comorbidity Scores Have Increased Medical Complications And Longer In-hospital Lengths Of Stay Following Primary Total Hip Arthroplasty

Rushabh Vakharia; Nipun Sodhi; Joseph Ehiorobo; Hiba Anis; Hytham Salem; Jared Newman; Michael A. Mont; Martin Roche

Poster No. 2064

Verification Of The Accelerated Delamination Test For Ultra-high Molecular Weight Polyethylene

Hideyuki Sakoda; Kengo Tamazawa; Yuichi Shoyama; Yuta Osaka; Keita Uetsuki; Yoshihiro Okamoto; Yuji Haishima

Poster No. 2065

Dual Mobility Articulations In Femoral Neck Fractures: A Systematic Review Of The Literature And Meta-analysis Of The Outcomes

Kevin M. Albanese; Prashant Deshmane; Nilesh Patil; Nathaniel R. Ordway; Dongliang Wang

Poster No. 2066

Biomechanical Changes Following Pavlik Harness Treatment For Developmental Dysplasia Of The Hip

Safeer F. Siddicky; Brien Rabenhorst; Junsig Wang; Elizabeth Aronson; Anna McCoy; Emma Casper; Samantha A. Mohler; Erin M. Mannen

Poster No. 2067

Does Bladder Catheterization Treatment For Postoperative Urinary Retention Increase Lengths Of Stay For Total Hip Arthroplasty Patients?

Peter Gold; Luke Garbarino; Hiba Anis; Nipun Sodhi; Sean Matuszak; Jamie Heimroth; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Michael Mont

Poster No. 2068

Strength, Corrosion, And Wear Performance Of Modular Total Hip Arthroplasty With A Peek Sleeve Interposed Between Femoral Head And Stem

Sourabh Boruah; Miriam Chaudhary; Suneel Bandi; Balaji Prabhu; Andrew Wood; Orhun K. Muratoglu; Kartik M. Varadarajan

Poster No. 2069

Comparison Of Instrument Impact Velocity Measured In Cadaveric Bone Versus Foam Bone Analogues

Jayne Elizabeth Gaverty; Erik Woodard; Heidi Welch; Andy Whitten

Poster No. 2070

Outcome Of Dual Mobility Articulations In Revision Total Hip Arthroplasty With Abductor Deficiency Associated With Adverse Local Tissue Reaction

David Fitz; Sakkadech Limmahakhun; Paul Arauz; Christian Klemt; Young-Min Kwon

Poster No. 2071

Radiographic Assessment Of The Dynasty Biofoam Acetabular Component With A Minimum 2 Years Follow-up

Alberto V. Carli; Romain Galmiche; Johanna Dobransky; Paul E. Beaulé

Poster No. 2072

Reduced Surgical Time In The Management Of Hip Fractures Decreases Major Complications

Meir T. Marmor; Guy Guenther; Jordan Barker; Jacob Matz; Matthew Herring

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Complication Rates And Length Of Stay In Computer-Assisted Vs. Conventional Total Hip Arthroplasty From 2010-2017:

A NSQIP Database Study

Jeremy S. Frederick; Anastasia Gazgalis; Thomas R. Hickernell; Jeffrey A. Geller; H. John Cooper; Roshan P. Shah; Alexander L. Neuwirth

Poster No. 2074

Analysis Of The Acoustic Effect Of A Powered Impaction Surgical Tool Used In A Total Hip Replacement Procedure

Michael J. Rock; Mark Reason; Robert Freeman; Dominic Clarke; Joe Lawton; Elisabetta Ferrari

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Shoulder and Elbow—Diagnostics

Poster No. 2075

Diagnostic Accuracy Of Ultrasound Scans For Subscapularis Tears
Rohan Prakash; Andrew Dekker; Gevdeep Bhabra; Chetan Modi; Thomas Lawrence; Stephen Drew

Poster No. 2076

Imaging Modalities For The Glenoid Track In Recurrent Shoulder Instability: A Systematic Review And Meta-analysis

Matthew Vopat; Christina Hermanns; Jordan Baker; Reed Coda; Sana Cheema; Armin Tarakemeh; Liam Peebles; Bryan Vopat; Matthew Provencher

Poster No. 2077

The Repeatability Of The Load And Shift Test During A Novel Quantitative Ultrasonographic Assessment

Satoshi Takeuchi; Guoming Xie; Christopher M. Gibbs; Satoshi Yamakawa; Calvin K. Chan; Volker Musahl; Kentaro Onishi; Albert Lin; Richard E. Debski

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Shoulder and Elbow—Growth, Development and Aging

Poster No. 2078

Early Osteoarthritis Observed After Recovery From Neonatal Brachial Plexus Palsy In A Mouse Model

Lynn Ann Forrester; Lynn Ann Forrester

Poster No. 2079

Mouse Subacromial Bursa Cells: A New Source Of Mesenchymal Stem Cells

Danielle E. Kriscenski; Amir Lebaschi; Lisa M. Tamburini; Mary Beth R. McCarthy; Augustus D. Mazzocca

Poster No. 2080

Shoulder ROM In Youth Baseball Pitchers: Pain Vs. No Pain

Gunnar Whealy; Justin Le-Bling; Ghulam Mujtaba; Xue-Cheng Liu; Shayne Fehr

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Shoulder and Elbow—Injury and Healing

Poster No. 2081

All-suture Anchor Repair Versus Traditional Transosseous Repair In A Rat Rotator Cuff Tear Model

Yang Liu; Sai Chuen Fu; Hio Teng Leong; Yau Chuk Cheuk; Patrick Shu-Hang Yung

Poster No. 2082

Associations Of Preoperative Patient Mental Health Status, Sociodemographic And Clinical Characteristics With Baseline Penn Shoulder Score In Patients Undergoing Rotator Cuff Repairs

Sambit Sahoo; Eric T. Richhetti; Alexander Zajichek; Vahid Entezari; Peter B. Imrey; Joseph P. Iannotti; Kathleen A. Derwin

Poster No. 2083

Differential Healing Of Small And Large Partial-width Defects In The Tendon Attachment Of The Rat Rotator Cuff

Anna Lia Sullivan; Ryan C. Locke; Megan L. Killian

Poster No. 2084

Simvastatin, but Not Losartan, Dose-Dependently Inhibits Gel Contraction and Reduces Viability of NIH3T3 and Human Elbow Capsule Cells In Vitro

Michael A. David; James A. Abraham; Aaron M. Chamberlain; Spencer P. Lake

Poster No. 2085

Failure Rates In Contact Versus Non-contact Athletes Following Arthroscopic Bankart Repair At 8.5 Year Follow-up

Kevin D. Plancher; Stephanie C. Petterson

Poster No. 2086

The Kinematics-only Predictor For Reducing Medial Elbow Load During Fastball Pitching In High School Baseball Pitchers

Hiroshi Tanaka; Toyohiko Hayashi; Hiroaki Inui; Tomoyuki Muto; Hiroki Ninomiya; Syoji Kobashi; Katsuya Nobuhara

Poster No. 2087

Allogeneic Pure Platelet-rich Plasma Therapy For Adhesive Capsulitis: A Bench And Bed Study

Minji Lee; Wonsub Sung; Chris Jo

Poster No. 2088

Return To Sport Testing At 6 Months After Arthroscopic Shoulder Stabilization Demonstrates Residual Strength And Functional Deficits

Kevin Wilson; Ryan Li; Adam Popchak; Gillian Kane; Albert Lin

Poster No. 2089

SDF-1 α Sustained Releasing Decellularized Scaffold Combined With Intra-articular Injection Of CXCR4+ Synovium-derived MSCs Accelerates Rotator Cuff Healing

Yang Chen; Can Chen; Muzhi Li; Han Xiao; Tao Zhang; Jianzhong Hu; Hongbin Lu

Poster No. 2090

Shoulder Instability In Patients Over 60 Years Old: A Case Series
Te-Feng Arthur Chou; Chun Yao Chang; Chun-Ching Huang;
Ming-Chau Chang; Wei-Ming Chen; Tung-Fu Huang

Poster No. 2091

Biomechanical Evaluation Of A Novel Double Rip-stop Technique With Medial Row Knots For Rotator Cuff Repair: An In-vitro Study
Zhanwen Wang; Hong Li; Zeling Long; Lin Subin; Andrew R Thoreson; Steven L. Moran; Anne Gingery; Peter C. Amadio; Scott P Steinmann; Chunfeng Zhao

Poster No. 2092

A Comparative Study Of Minimally Invasive Plate Osteosynthesis And Closed Intramedullary Nailing In Shaft Fracture Of Humerus
Suhirad Khokhar; Shivleen Gill

Poster No. 2093

Withdrawn

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Shoulder and Elbow—Structure, Function and Mechanics

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Irrigation Solutions Negatively Affect The Viability And Function Of Human Fibroblasts: An In-vitro Study

David Sosnoski; Paula Dietz; Therese Bou-Akl; Weiping Ren; David Markel

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Prrx1 Expression Is Involved In The Malignant Transformation Of Osteosarcoma

Ryoji Joko; Takeshi Takarada; Eiji Nakata; Daisuke Yamada; Aki Yoshida; Suguru Yokoo; Koji Demiya; Syota Takihira; Hiroya Kondo; Joh Hasei; Toshiyuki Kunisada; Toshifumi Ozaki

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P53-armed Oncolytic Virotherapy Enhances The Antitumor Efficacy Both For Local And Distant Site In Osteosarcoma

Koji Demiya; Hiroshi Tazawa; Hiroya Kondo; Miho Kure; Joe Hasei; Toshiyuki Kunisada; Yasuo Urata; Toshiyoshi Fujiwara; Toshifumi Ozaki

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Combination Therapy Of Mtor Inhibitor And Vegfr Inhibitor Regress A Doxorubicin-resistant Osteosarcoma In A Patient-derived Orthotopic Xenograft (PDOX) Mouse Model And The In Vivo Angiogenesis Assay Model

Hiromichi Oshiro; Yasunori Tome; Takashi Toma; Hiroki Maehara; Robert M. Hoffman; Kotaro Nishida

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Aberrant DDR1 Expression In Liposarcoma And The Therapeutic Potential Of Is Targeted Small Molecule Inhibition

Dylan C. Dean; Pichaya Thanindratan; Francis Hornicek; Zhenfeng Duan

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Finite Element Fracture Predictions For Patients With Metastatic Lesions Of The Proximal Femur

Timothy Damron; Mark Miller; Shannon Kaupp; Kenneth A. Mann

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Influence Of Cement Type And Argon Beam Pretreatment On Articular Cartilage Adjacent To A Simulated Giant Cell Tumor Of The Distal Femur

Michael D. Newton; Nickolas Linkous; Jeffrey Osborne; Michael D. Kurdziel; Ali Yilmaz; Zafer Ugur; Emily Falkowski; Rania Anoni; Stewart F. Graham; Drew D. Moore; Kevin C. Baker

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Cabozantinib Reduces Osteolysis From Renal Cell Carcinoma Bone Metastases Via Therapeutic Targeting Of The Osteogenic Niche

Robert L. Satcher; Tianhong Pan; Mary C. Farach-Carson; Sue H. Lin

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Sarcoma Survival In The U.S. Military Population Comparison Of The DoD Central Cancer Registry And National Cancer Institute's Seer Program

Ashley B. Anderson; Kangmin Zhu; Jie Lin; Amie B. Park; Craig D. Shriver; Benjamin K. Potter

Poster No. 2222

Anti-cancer Drug Delivery Via DNA-inspired Janus Base Nanotubes

Wuxia Zhang; Zhiqiang Shen; Hongchuan Yu; Ying Li; Yupeng Chen

Poster No. 2223

An Accurate Method For Image Quality Evaluation In Myxofibrosarcoma (MFS)

Tomotaka Yoshida; Yusuke Kawabata; Ikuma Kato; Kenta Hayashida; Akira Shiga; Masanobu Takeyama; Yutaka Inaba

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Copper Levels And Aldh1a1 Expression Varies Between Low And Highly Metastatic Human Osteosarcoma Cell Lines And Human Samples

Jonathan Mandell; Nerone Douglas; Jan Beumer; Rebecca Watters; Kurt Weiss

Poster No. 2225

Smoking Is A Poorer Pulmonary Metastasis-free Survival In Soft Tissue Sarcoma Patients

Masatake Matsuoka; Tamotsu Soma; Ryuta Arai; Isao Yokota; Tomohiro Onodera; Eiji Kondo; Norimasa Iwasaki; Hiroaki Hiraga

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Epigenetic Modulator Modulates The Vascular Endothelial Growth Inhibitor (vegi)-mediated Cell Death In Human Osteosarcoma And Vascular Endothelial Cells

Shunsuke Kumanishi; Hiroyuki Futani; Tatsuo Sawai; Shinichi Yoshiya; Toshiya Tachibana

Poster No. 2227

Short Term Outcomes Of Percutaneous Screw Fixation Of Pelvic Ring Fractures In Orthopaedic Oncology Patients

Sheena J. Amin; Joseph Massaglia; Kenneth W. Graf; Tae Won B. Kim

Poster No. 2228

The Combination Of Mtor Inhibitor And Mek Inhibitors Improves The Growth Inhibitory Effect Of Nara-h Cells

Takahiro Negayama; Osamu Nakamura; Yoshiki Yamagami; Natsuko Fukuoka; Tetsuji Yamamoto

Poster No. 2229

Intraoperative Angiography For Predicting Wound Complications In Soft Tissue Sarcoma Of The Extremities: A Pilot Study

Alexander Leandros Lazarides; Eliana Saltzman; Julia Visgauss; Suhail Mithani; William Eward; Brian Brigman

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The Clinical Results Of Trabectedin Or Eribulin Chemotherapy In Advanced Soft Tissue Sarcomas

Masanobu Takeyama; Yusuke Kawabata; Ikuma Kato; Kenta Hayashida; Shintaro Fujita; Yutaka Inaba

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Expression Analysis Of Proteins Associated With The Regulation Of C-kit In Gastrointestinal Stromal Tumor Surgical Specimens And Evaluation Of The Effectiveness Of Hsp90 Inhibitors

Keita Sasa; Yoshiyuki Suehara; Taketo Okubo; Takuo Hayashi; Kei Sano; Taisei Kurihara; Keisuke Akaike; Midori Ishii; Youngji Kim; Kazuo Kaneko; Tsuyoshi Saito

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Risk Factors Of Venous Thromboembolism In Patients With Benign And Malignant Orthopaedic Cancer: A Dual Database Analysis

Dominick V. Congiusta; Kamil Amer; Meet Patel; Kathleen Beebe

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Cancer Stem Cells As A Therapeutic Target In 3D Tumor Models Of Human Chondrosarcoma: An Encouraging Future For Proline Rich Polypeptide-1

Caroline June Granger; Alexandra Moran; Aaron Hoyt; Sheila Conway; Karina Galoian

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Determining The Osteogenic Potential Of Human Mesenchymal Stem Cells On A Type I Collagen /hydroxyapatite Scaffold When Exposed To Osteosarcoma Chemotherapeutics

Ava A. Brozovich; Francesca Taraballi; Stefania Lenna; Ennio Tasciotti

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Highly Metastatic Phenotype Is Modulated By Cell Stiffness Osteosarcoma Cell Lines

Kouji KIta; Kunihiro Asanuma; Takayuki Okamoto; Kouichi Nakamura; Tomohito Hagi; Tomoki Nakamura; Akihiro Sudo

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Outcomes Of Press-fit Versus Cemented Hip Arthroplasty In The Oncologic Patient

Christopher G. Larsen; William Crockatt; Michael Fitzgerald; Nanette Matos; Howard Goodman; Samuel Kenan; Shachar Kenan

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Development Of A Detection System For Osteosarcoma Radiographs Using Deep Learning

Joe Hasei; Ryuichi Nakahara; Eiji Nakata; Toshiyuki Kunisada; Momoko Furuta; Tadashi Miyamoto; Antonie Choppin; Toshifumi Ozaki

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Dose-dependent Inhibition Of Osteosarcoma Cell Viability By Aspirin Alone And In Conjunction With Docosahexaenoic Acid

Andrew R. Cooper; Irvin V. Ma; Tayeb Abbas; Ronald S. Pardini

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Load Transfer Across A Mandible During A Mastication Cycle: The Effects Of Odontogenic Tumour

Abir Dutta; Kaushik Mukherjee; Venkata Sundeep Seesala; Kaushik Dutta; Ranjan Rashmi Paul; Santanu Dhara; Sanjay Gupta

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Surgical Duration Implicated In Major Postoperative Complications In Total Hip And Knee Arthroplasty

Remy Lee; Mark Orland; Edmund Naami; Michael Patetta; Awais Hussain; Mark Gonzalez

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Surgeon Volume Affects Short- And Long-term Outcomes In Idiopathic Scoliosis

Dean C. Perfetti; Alex M. Satin; Terry D. Amaral; Vishal Sarwahi

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Total Hip Arthroplasty Outcomes In Patients With Acetabular Protrusion

Danielle Elizabeth Greig; Peter Hsiue; Clark Chen; Rishi Trikha; Alexandra Stavrakis

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Minimizing Probability Of A 2nd Opioid Prescription To Reduce Long-term Dependence

Kelsey Wise; Dylan McCreary; Brian Cunningham; David Ring; Harsh Parikh

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Machine Learning And Knee Range Of Motion: Optimizing Variables For Computing Knee Flexion Using Wearables And A Single Processor

Megan McCabe; Douglas Van Citters; Ryan M. Chapman

Poster No. 2245

Chronic Corticosteroid Use As A Risk Factor For Perioperative Complications In Patients Undergoing Total Joint Arthroplasty

Haley Danielle Kittle; Andrew F. Ormseth; Michael Patetta; Anshum Sood; Mark Gonzalez

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Evaluating The Readability Of Online Patient Education Materials For Knee Reconstruction Surgery?

Anshum Sood; Michael Patetta; Chetan Ambastha; Mark Gonzalez

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Global Gene Expression Analysis Identified Age-related Differences In Knee Joint Transcriptome During The Development Of Post-traumatic Osteoarthritis In Mice

Aimy Sebastian; Melanie Mendez; Deepa Muruges; Nicholas Hum; Blaine Christiansen; Gabriela Loots

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Cardiovascular Disease Associated With A Higher Incidence Of Major Postoperative Complications In Total Hip And Knee Arthroplasty

Mark Orland; Edmund Naami; Remy Lee; Anshum Sood; Awais Hussain; Mark Gonzalez

Poster No. 2249

Decreasing Medicare Reimbursement Rates In Orthopaedic Shoulder Surgery From 2000 To 2019

Michael L. Moore; Jordan R. Pollock; Jack M. Haglin; Joshua S. Bingham

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One Third Of Patients > 80 Years With A Distal Radius Fracture Have Inferior Subjective Outcome One Year After Fracture. A Register Based Study

Magnus Tagil; Linnea Arvidsson; Antonio Abramo; Philippe Kopylov; Marcus Landgren

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Exclusion Criteria In Clinical Evaluation Of A Disc Cell Therapy: How Do We Ensure A Robust Answer?

Lara I. Silverman; Dom Coric; Kevin Foley

Poster No. 2252

Use Of PROMIS And Functional Movement System (FMS) Testing To Evaluate The Effects Of Athletic Performance And Injury Prevention Training In Female High School Athletes

Calvin L. Cole; Kostantinos Vasalos; Gregg Nicandri; Michael D. Maloney; Edward M. Schwarz

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Clinical Studies—Disease Epidemiology

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Moderate To Severe LBP Was Associated With Recurrent Falls In People With Knee Osteoarthritis

Hirota Iijima; Kanako Shimoura; Tomoki Aoyama; Masaki Takahashi

Poster No. 2254

Sarcopenic Knee Osteoarthritis: A Risk Factor For Recurrent Falls

Hirota Iijima; Tomoki Aoyama

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Association Between Radiographic Vertebral Fractures And Sex Hormones In Men: A Cross-sectional Population-based Study In Japan

Masayuki Ichinohe; Kanichiro Wada; Gentaro Kumagai; Sunao Tanaka; Toru Asari; Seiya Ota; On Takeda; Kazushige Koyama; Shigeyuki Nakaji; Yasuyuki Ishibashi

Poster No. 2256

Low Back Pain Is Closely Associated With Frailty But Not Sarcopenia: Cross-sectional Study Of Rural Japanese Community-dwelling Older Adults

Shotaro Tsuji; Keishi Maruo; Tomoya Iseki; Toshiya Tachibana

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Does 'Middle Age' Influence Risk Factors And Outcomes Following Revision Total Knee Arthroplasty?

Paul Walker; Venkatsaiah Tirumala; Christian Klemm; Ruben Oganessian; Janna van den Kieboom; John Drago; Kaya Adelzadeh; Andriana Velmahos; Saimrunali Dadigala; Travis Dang; Alina Syros; Young-Min Kwon

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Geographic Distribution In Incidence Of Osteonecrosis Of The Femoral Head Was Related To Smoking Rate In Japan

Tetsuro Tani; Wataru Ando; Wakaba Fukushima; Hidetoshi Hamada; Masaki Takao; Nobuhiko Sugano

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A Multidimensional Cluster Analysis Identifies Worse Knee Symptom Subgroups In General Population; The Nagahama Study

Kazuya Nigoro; Hiromu Ito; Tomotoshi Kawata; Kohei Nishitani; Yasuhiro Tabara; Fumihiko Matsuda; Shu Narumiya; Shuichi Matsuda

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Does Injury Severity Score Contribute To Undertriaging Of Geriatric Acetabular Fractures

Yen Chen; Luke Garbarino; Timothy Walden; Frank Mota; Lewis Collins; Hadi Aziz; Cristy Meyer; Annmarie Glazer; Ariel Goldman

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Waist-mounted Sensor Algorithm For Gait Events Detection: A Scoping Review

Hirota Iijima; Masaki Takahashi

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Incidence Of Heterotopic Ossification In Direct Anterior Approach Total Hip Arthroplasty With The Use Of Aspirin As Thromboembolic Prophylaxis

Paul Knapp

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Glycolipid Expression Analysis Of Chondrocyte-like Cells Derived From Human Induced Pluripotent Stem Cells (hipsc)

Liang Xu; Tomohiro Onodera; Jun-ichi Furukawa; Hisatoshi Hanamatsu; Kentaro Homan; Kazutoshi Hontani; Takuji Miyazaki; Yuan Tian; Norimasa Iwasaki

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An Early Inflammatory Response Is Followed By Prolonged Hypercoagulability In Hip Fracture Patients

Daniel You; Paul Cattle; Robert Korley; Adrienne Lee; Paul McBeth; Braedon McDonald; Leslie Skeith; Paul Duffy; Ryan Martin; Andrea Soo; Prism Schneider

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The Useful Detection Of Pulmonary Embolism Using Blood Marker After Spine Surgery

Hirokazu Inoue; Hideaki Watanabe; Atsushi Kimura; Yasuyuki Shiraishi; Ryo Sugawara; Teruaki Endo; Katsushi Takeshita

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A 3-month Prebiotic Diet Intervention Can Improve Knee Joint Function In Adults With Obesity Suffering From Knee Osteoarthritis

Rafael Fortuna; Keith Sharkey; David Hart; Raylene Reimer

Poster No. 2267

Specific Intraoperative Events Cause Notable Increases In Airborne Particle Counts During Total Knee Arthroplasty

Anastasia Gazgalis; Jeremy S. Frederick; Michael B. Held; Alexander L. Neuwirth; Nana O. Sarpong; Roshan P. Shah; Jeffrey A. Geller; H. John Cooper; Thomas R. Hickernell

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Measurement Of Value In Anterior Cruciate Ligament Reconstruction:

Patient-level Value Analysis For The Two-year Episode Of Care

Breana Siljander; Ilexa Flagstad; Harsh Parikh; Megan Reams; Marc Tompkins; Bradley Nelson; Brian Cunningham

Poster No. 2269

Application Of Wearable Technology And Vivametrica Analytics To Support Outcomes Of Total Knee Arthroplasty In Alberta

Kristen Barton; Trevor Seeger; Ania Kania-Richmond

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Statistical Assumptions: Skewing Significance For You And Me

Anthony V. Christiano; Daniel A. London; Joseph P. Barbera; Gregory M. Frechette; Stephen R. Sclerian; Amy S. Nowacki

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Increasing Elixhauser-comorbidity Index Score Is Associated With Increased 90-day Medical Complications And Greater In-hospital Length Of Stays In Patients Undergoing Primary Anterior Cervical Discectomy And Fusion

Daniel N. Kiridly; Nipun Sodhi; Rushabh Vakharia; Hiba Anis; Alexander Satin; Martin W. Roche; Michael Mont

Poster No. 2272

Cost Variation In Temporizing External Fixation Of Tibial Plateau And Pilon Fractures: Is There Room To Improve?

Bandeel Okelana; Tiffany Gorman; Kevin Hayek; Will Freking; Harsh Parikh; Brian Cunningham

Poster No. 2273

Criteria Of Femoral Shortening Osteotomy In Total Hip Arthroplasty For High Hip Dislocation

Takeshi Ogawa; Wataru Ando; Yoshichika Hashimoto; Yasunori Okamoto; Tsuyoshi Koyama; Takayuki Tsuda

Poster No. 2274

Patient-reported Pain And Activities Of Daily Living Affect Joint Perception Following Total Hip Arthroplasty

Kyohei Shiimoto; Satoshi Hamai; Goro Motomura; Satoshi Ikemura; Masanori Fujii; Shinya Kawahara; Yasuharu Nakashima

Poster No. 2275

Opioid Consumption Following Robotically Assisted Versus Conventional Total Knee Arthroplasty

Austin C. Kaidi; Anastasia Gazgalis; Emma Jennings; Alexander L. Neuwirth; Roshan P. Shah; Jeffrey A. Geller; Thomas R. Hickernell

Poster No. 2276

Investigating The Effect Of Operative Times Combined With Post Anesthesia Care Unit Time On Hospital Lengths Of Stay After Primary Total Knee Arthroplasty

Peter Gold; Luke Garbarino; Hiba Anis; Alanna Carcich; Eric Grossman; Nipun Sodhi; Michael J. Sayegh; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Stanley Asnis; Michael Mont

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Cannabis Use Increases Ninety-day Readmission Rates And Cost Of Care Following Primary Total Hip Arthroplasty: A Matched-control Analysis

Rushabh Vakharia; Joseph Ehiorobo; Hiba Anis; Nipun Sodhi; Jared M. Newman; Hytham Salem; Jared A. Warren; Michael A. Mont; Martin W. Roche

Poster No. 2278

Return To Running After Total Joint (ReJoin)

Antonia F. Chen; Brielle Antonelli; Rebecca Teng; Danielle Ponzio; Sarah Ulcoq; Rebecca G. Breslow

Poster No. 2279

Increased Academic Productivity In Orthopaedic Faculty Following Restructuring Of A Residency Program Research Rotation

Caroline June Granger; Alexander Roth; Evan Nigh; Victor Hernandez; Michael Baraga; Sheila Conway

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Has The Level Of Evidence In Orthopaedic Trauma And Non-trauma Publications Improved? A Publication Review Of 3 Major Orthopaedic Journals

Kitchai Luksameearunothai; Erik Hasenboehler; Sorawut Thamyongkit; Xiaofeng Jia

Poster No. 2281

Can Decreasing Implant Costs Increase Net Reimbursement For Surgically Treated Ankle Fractures?

Will Freking; Logan McMillan; Kendra Kibble; Harsh Parikh; Harsh Parikh; Brian Cunningham

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Retrograde Elastic Intramedullary Nailing Insertion Technique Results In Lower Hardware Complications In Pediatric Ulnar Fractures

Taylor R. Johnson; Andrew Haus; Abraham I. Bankole; Kush N. Shah; Grant D. Hogue

Poster No. 2283

Trends In Episodic-based Medicare Reimbursement For Major Joint Replacement: 2011-2016

Jack M. Haglin; David G. Deckey; Jordan R. Pollock; Mark J. Spangehl

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Clinical Results And Pathohistological Findings Of Autologous Chondrocyte Implantation For Cartilage Defect Of The Knee
Akemi Suzuki; Atsushi Narita; Taku Nakajima; Takao Yamamoto; Tamon Asano; Michiaki Takagi

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Evaluation Of Sagittal Pelvic Tilt In Standing, Supine And Sitting In Total Hip Arthroplasty Patients
Shintaro Wanatabe; Hyonmin Choe; Naomi Kobayashi; Taro Tezuka; Daigo Kobayashi; Yutaka Inaba

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Intraoperative Assessment Of A Modern Total Knee Arthroplasty Femoral Design
Yifei Dai; H Morton Bertram III; Mark Hollmann

Poster No. 2287

Does The Severity Of Coronal Deformity Influence Patient Satisfaction For Total Knee Arthroplasty?
Kevin Marchand; Kelly Taylor; Caitlin Condrey; Laura Scholl; Emily Hampp; Ushna Arora; Robert Marchand

Poster No. 2288

New Level Of Evidence Guidelines Change Previously Published Manuscripts' Designation
Anthony V. Christiano; Joseph P. Barbera; Gregory M. Frechette; Stephen R. Selverian; Daniel A. London

Poster No. 2289

Do Post-anesthesia Care Unit Recovery Protocols Decrease Recovery Time Following Total Knee Arthroplasty?
Luke Garbarino; Peter Gold; Hiba Anis; Alanna Carcich; Eric Grossman; Nipun Sodhi; Michael J. Sayegh; Jonathan Danoff; Sreevathsa Boraiah; Vijay Rasquinha; Stanley Asnis; Michael Mont

Poster No. 2290

Perceptions Of Polymethylmethacrylate (pmma) Cement Exposure Among Female Orthopedic Surgeons
Rachel Bratescu; David Dong; Shari Liberman; Stephen Incavo; Katharine Harper

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LATE BREAKING POSTER SESSIONS

Late Breaking Poster Session 1

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Use Of Machine Learning To Identify Preoperatively If A Shoulder Arthroplasty Patient Will Achieve Clinical Improvement That Exceeds The Mcid And Scb Thresholds For 3 Different Clinical Outcome Metric Scores
Vikas Kumar; Christopher P. Roche; Steve Overman; Ryan Simovitch; Pierre-Henri Flurin; Thomas Wright; Joseph Zuckerman; Howard Routman; Ankur Teredesai

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Predicting Range Of Motion After Shoulder Arthroplasty Using Three Different Supervised Machine Learning Algorithms
Vikas Kumar; Christopher P. Roche; Steve Overman; Ryan Simovitch; Pierre-Henri Flurin; Thomas Wright; Joseph Zuckerman; Howard Routman; Ankur Teredesai

Poster No. 2303

Random Forest Classifier Outperforms Several Machine Learning Models For Prediction Of Unplanned Readmission Following Primary Total Shoulder Arthroplasty: Comparison Of Five Algorithms And Strategies For Model Optimization
Varun Arvind; Aakash Keswani; Daniel London; Carl Cirino; Paul Cagle

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Predicting The American Shoulder And Elbow Surgeons Score (ASES) Using Machine Learning Algorithms In Arthroscopic Rotator Cuff Surgery
Mario O. Fuentes; Ashim Gupta; Ajish SR Potty; Deepak Ganta; Anish GR Potty

Poster No. 2305

Systematic Characterization Of A Novel Gelma-based Hydrogel System
Jiannan Li; Seyedsina Moeinzadeh; Carolyn Kim; Chi-Chun Pan; George Weale; Yunzhi Peter Yang

Poster No. 2306

Cell Populations Of Minimally Manipulated Bone Marrow Aspirate Concentrate And The Adipose-derived Stromal Vascular Fraction Harvested From The Same Patients Are Different
Severin Ruoss; Scott T. Ball; Chanond A. Nasamran; Shanelle N. Dorn; Jesal Parekh; Kathleen M. Fisch; Samuel R. Ward

Poster No. 2307

On Structure-function Relationships Of 3D Printed Biomimetic Porous Biomaterials For Orthopaedic Applications
Maryam Tilton; Alireza Borjali; Kartik Mangudi Varadarajan; Guha Prasanna Manogharan

Poster No. 2308

Clustering Cytokines, Chemokines And Growth Factors Composition In Platelet-rich Plasma Preparations Within Different Phases Of The Healing Process: A Novel Classification Concept
Kaitlyn E. Whitney; Alyson Fiorentino; Johnny Huard

Poster No. 2309

Carbon-infiltrated Carbon Nanotube Surface Enhancement Of Stainless Steel Stimulates Adhesion In Human Osteoblasts
Jacquelyn A. Monroe; Lucy Bowden; Sandra Hope; Brian D. Jensen; Anton E. Bowden

Poster No. 2310

Improved Biocompatibility Of 3D-printed Absorbable Porous Zinc Implants In Dynamic Perfusion Systems
Prathyusha Pavanram; Yageng Li; J. Zhou; Thomas Pufe; Amir A. Zadpoor; Holger Jahr

Poster No. 2311

Effects Of Increased Non-enzymatic Cross-linking On Mechanical Properties In Bovine Cortical Bone
Lily Kim; William Woolley; James Rosenberg; Claire Acevedo

Poster No. 2312

Morphological Changes In Proximal Sesamoid Bones From Racehorses As A Model For Overuse Joint Injuries
Sarah Kinsey Shaffer; Susan M. Stover; David P. Fyhrie

Poster No. 2313

Purinergic Signaling Through The P2y2 Receptor Downregulates The Mechanosensitivity Of Mlo-y4 Cells
Joseph Gardinier; Chunbin Zhang; Conor Daly-Seiler

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The Voltage-sensitive Calcium Channel Auxiliary Subunit $\alpha_2\delta_1$ Influences The Osteogenic And Adipogenic Potential Of Mesenchymal Progenitor Cells
Katelyn Semon; Christian S. Wright; Mary C. Farach-Carson; Alexander G. Robling; William R. Thompson

Poster No. 2315

Comparative Transcriptomics And Single-cell RNA Seq Identify Divergent Gene Expression In Osteoprogenitors During Zebrafish And Rat Bone Regeneration
Eric Katzung; W. Joyce Tang; Claire Watson; Christopher Allan; Ronald Kwon

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Magnesium Reduces Sclerostin Secreted From Fibroblasts To Improve The Healing Of Bone Fracture
Jiankun Xu

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Calcitonin Gene-related Peptide Enhances Distraction Osteogenesis By Increasing Angiogenesis

Jie Mi; Jiankun Xu; Hao Yao; Ye Li; Bingyang Dai; Xuan He; Wenxue Tong; Ling Qin

Poster No. 2318

Autologous Fat-derived Mesenchymal Stem Cells For Fracture Healing Enhancement In Atrophic Non-union Model

Murtadhah M. K. Jalal; Robert Wallace; A. Hamish Simpson; Bruno Peault

Poster No. 2319

Classification Of Graded Partial Weight-bearing Using Motion Analysis Measurements

Kristine Khieu; Surabhi Kalyan; Vidyadhar Upasani; Alan Lunardhi

Poster No. 2320

Multimodal Imaging For Evaluation Of Midfoot Stress Fracture Healing

Chantal M.J. de Bakker; Richard E.A. Walker; Andrew E. Dodd; Justin Tse; Sarah L. Manske; Steven K. Boyd

Poster No. 2321

Rhbm-2 Coated, 3D-printed, Macro/micro Porous, Bioactive Ceramic Scaffold As An Alternative Graft Material In Treating Critical Femoral Bone Defects In Rabbits Using The Induced Membrane Technique

Jae-Woo Cho; Won-Tae Cho; Eic-Ju Lim; Seungyeob Sakong; Beom-Soo Kim; Jong-Keon Oh

Poster No. 2322

Impact Of Sex-based Differences On Cartilage Tissue Engineering With Canine Chondrocytes

Lianna R. Gangi; Hagar M. Kenawy; Robert M. Stefani; Neeraj Sakhrani; Aaron M. Stoker; James L. Cook; Nadeen O. Chahine; Gerard A. Ateshian; Clark T. Hung

Poster No. 2323

Hierarchical Nature Of Nanoscale Porosity In Bone Revealed By Positron Annihilation Lifetime Spectroscopy

Taeyong Ahn; David Gidley; Aaron Thornton; Antek Wong-Foy; Bradford Orr; Kenneth Kozloff; Mark Banaszak Holl

Poster No. 2324

An Adaptable CT-derived 3D-printed Alignment Fixture Minimizes Errors In Whole-bone Biomechanical Testing

Jordan V. Inacio; Danielle M. Cristino; Michael W. Hast; Hannah L. Dailey

Poster No. 2325

Specific Substrate Characteristics Stimulate Osteoblastic Differentiation Through Activation Of Focal Adhesions And Increased B-catenin Nuclear Translocation

Otto J. Juhl; Anna-Blessing Merife; Christopher Lemmon; Yue Zhang; Henry Donahue

Poster No. 2326

Characterising The 'Mechanosome' In A Humanised 3D Mechanical Loading Model Of MSC Derived Osteocytes

Sophie Gilbert; Cleo Bonnet; Deborah Mason

Poster No. 2327

Withdrawn

Poster No. 2328

Myostatin Decoy Receptor Protects Against Spaceflight-induced Osteocyte Lacunar Morphology Changes In Mice Exposed To 13 Days Of Microgravity

Jennifer C. Coulombe; Louis S. Stodieck; Virginia L. Ferguson

Poster No. 2329

Smart Osteosynthesis Plate Quantifies Progression Of Fracture Healing

Sydney Caparaso; Keegan P. Cole; Katerina Kradinova; Benjamin Liddle; Dustin Schroeder; Nathaniel Cady; Michael T. Archdeacon; Eric H. Ledet

Poster No. 2330

Thoracic Morphology Characterization And Modeling For Rib Fixation Device Design And Surgical Planning

Ashley A. Weaver; Shannon L. Taylor; Katelyn A. Greene

Poster No. 2331

Plaster Of Paris Bandage: Optimal Number Of Layers In Fracture Fixation

Shayan Hosseinzadeh; Jonathan Egan; Mahsa Shariat; Patrick Williamson; Kaveh Momenzadeh; Madison Van Dam; Edward K. Rodrigue; Ara Nazarian; Xuan Luo

Poster No. 2332

Topical Administration Of Raloxifene Does Not Significantly Improve Bone Toughness Or Screw Pull-out Strength

Michael R. Eby; Danielle M. Cristino; Matthew M. Counihan; Kendall M. Masada; Michael W. Hast; Jaimo Ahn

Poster No. 2333

Simulating Hyperglycemia And Inflammation On Mouse Joints Under Mechanical Stress Via A Novel "Joint-in-motion" Device

Yuxi Chen; Carrie Hui Mingalone; Brooke Longo; Christopher Nehme; Kirsten Garvey; Rose Banks; Thomas James; William Messner; Li Zeng

Poster No. 2334

GRK2 Signaling As A Novel Modulator For Osteoarthritis Development And Progression

Adeel Ahmad; Vengadeshprabhu Karuppagounder; William J. Pinamont; Natalie Yoshioka; Gregory M. Young; Reyad Elbarbary; Fadia Kamal

Poster No. 2335

Withdrawn

Poster No. 2336

Snapshot Of Tissue Property Changes With Age In Porcine Hip Cartilage And Subchondral Bone

Masumeh Kazemi; Fazal Ur Rehman Bhatti; John Leicester Williams; Hongsik Cho

Poster No. 2337

Augmented Immunomodulation Of Endogenous Marrow-derived Stem Cells In The Setting Of ACL Rupture

Mackenzie Fleischer; Michael Newton; Samantha Hartner; Brandon Luczak; Adam Driscoll; Anthony Arveschoug; Kevin Baker

Poster No. 2338

Markers Of Cartilage Matrix Degradation Resulting From Mechanical Injury And Inflammation Were Reduced With Low-dose Dexamethasone Treatment

Garima Dwivedi; Lisa Flaman; André Struglics; Staffan Larsson; Eliot Frank; Susanna Chubinskaya; Begum Alaybeyoglu; Emily Geishecker; Murat Cirit; Alan J. Grodzinsky

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Effect Of Human Articular Cartilage Constituents On Simultaneous Diffusion Of Cationic And Non-ionic Contrast Agents

Mikael J. Turunen; Abhisek Bhattarai; Mark Grinstaff; Juha Töyräs; Janne TA Mäkelä

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Molecular Biological And Biotribological Properties Of Osteochondral Grafts Treated With Proinflammatory Cytokines

Christoph Bauer; Hakan Göçerler; Eugenia Niculescu-Morzsá; Vivek Jeyakumar; Christoph Stotter; Thomas Klestil; Friedrich Franek; Stefan Nehrer

Poster No. 2341

Effects Of Lithium Chloride On Chondrocyte Primary Cilia In 3D Culture

Arianna Soave; Stephen Waldman

Poster No. 2342

An Engineered Anatomic Implant Restores The Geometry And Biomechanics Of The Porcine Accessory Carpal

Brendan Stoeckl; George Fryhofer; Megan Farrell; Hannah Zlotnick; Michael Hast; Thomas Schaer; David Steinberg; Robert Mauck

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Fabrication Of Integrated Multi-phasic MSC-laden Composite Scaffolds For Osteochondral Repair

George W. Fryhofer; Hannah M. Zlotnick; Brendan D. Stoeckl; Megan J. Farrell; David R. Steinberg; Robert L. Mauck

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Auto-regulated Suppression Of Runx2 Activity In Human Mesenchymal Stem Cells To Improve Cartilage Matrix Production During Inflammation

Gurcharan Kaur; Biming Wu; Rhima Coleman

Poster No. 2345

Attenuation Of Hypertrophy In Tissue Engineered Cartilage

Justin Morman; Jessica M. Falcon; Dylan Chirman; Shital Kandel; William Querido; Nancy Pleshko

Poster No. 2346

Proteomic Analysis Of Imperfect Rescue Of Cartilage Breakdown By Dexamethasone

Rebecca Black; Yang Wang; Pilar Lorenzo; Susanna Chubinskaya; Alan J. Grodzinsky; Patrik Önnérfjord

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Impact Of Comorbidities On Osteoarthritis Knee Pain: Data From The Osteoarthritis Initiative

Annett Eitner; Adam G. Culvenor; Wolfgang Wirth; Hans-Georg Schaible; Felix Eckstein

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Computational Modeling Of Operating Room Airflow

Robert Godkin; Iram Rahman; Mitchell C. Weiser; Jennifer R. Weiser

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Mobile Device Physical Activity Data And Patient Reported Outcomes In Total Joint Arthroplasty

Joel J. Gagnier

Poster No. 2350

Robotic Assisted Total Knee Surgery—An Economic Analysis

Andrea B. Coppolecchia; James Pierce; Keith Needham; Chris Adams; Carlos Lavernia

Poster No. 2351

Long Term Experience With Computer Assisted Total Knee Replacement

Mary T. Bayers-Thering; Matthew J. Phillips; Justin Harvey; Benjamin Morrish

Poster No. 2352

Method For Assessing Accuracy And Precision Of Tar Using Patient Specific Instrumentation

Benjamin M. Koerber; Joseph S. Park; Michael J. Casale; Jason R. Kerrigan; E. Meade Spratley

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Anterior Placement Of The Talar Component In Total Ankle Arthroplasty Is A Risk Factor For Subsidence

Tetsuya Yamamoto; Noriyuki Kanzaki; Koji Nukuto; Takahiro Yamashita; Kazuyuki Ibaraki; Kanto Nagai; Daisuke Araki; Yuichi Hoshino; Takehiko Matsushita; Ryosuke Kuroda

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Effect Of Total Ankle Replacement On Ankle Kinematics During Internal Rotation

Watson A. Spivey; Cody M. O'Cain; Bronislaw D. Gepner; Edward M. Spratley; Joesph S. Park; Jason R. Kerrigan

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Using Dynamic Portable Ultrasonography For The Diagnosis Of Lateral Ankle Instability

Jirawat Saengsin; Rohan Bhimani; Go Sato; Noortje Hagemeijer; Bart Lubberts; Gregory Waryasz; Daniel Guss; Christopher W. DiGiovanni

Poster No. 2356

Plantar Pressure Sensors Show Females Have Significantly Higher Peak Pressure On The Toe, Forefoot, And Inside Compared To Males

Tetsuya Yamamoto; Yuichi Hoshino; Noriyuki Kanzaki; Koji Nukuto; Takahiro Yamashita; Kazuyuki Ibaraki; Kouki Nagamune; Kanto Nagai; Daisuke Araki; Takehiko Matsushita; Ryosuke Kuroda

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The Effect Of Radioscapholunate Fusion, Four-corner Fusion, And Proximal Row Carpectomy On Wrist Range Of Motion And Contact Pressures

Augustine Mark Saiz; Connor Delman; Kathy Wann; Sean McNary; Max Haffner; Robert M. Szabo; Christopher O. Bayne

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Four-dimensional Computed Tomography To Measure Distal-radial And Radio-carpal Joint Congruency Following Wrist Fracture

Puneet Ranota; Emily Lalone; Ting-Yim Lee; Nina Suh

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Pre- And Post-revision Peripheral Blood Lymphocyte Subpopulations In Patients With A Failed Metal-on-metal Hip Implant Associated With A Pseudotumor

Isabelle Catelas; Eric A. Lehoux; Paul E. Beaulé

Poster No. 2360

Age-related Sexual Dimorphism Of The Proximal Femur In Portuguese Water Dogs: Implications For Total Hip Replacement And Osteoporosis

James H. Marshall; Angelina J. Skedros; Meredith G. Luczak; Brody W. King; Kevin Chase; John G. Skedros; Karl G. Lark

Poster No. 2361

Geometric Method For Assessing Volumetric Change Polyethylene Liners In Total Hip Replacement

Mazen Al-hajjar; Taiyibah Afzal; Sophie Williams

Poster No. 2362

Short- To Mid-term Outcomes Of Reverse Periacetabular Osteotomy For Symptomatic Hip Overcoverage

Stephanie Y. Pun; Shayan Hosseinzadeh; Roya Dastjerdi; Michael B. Millis

Poster No. 2363

Minimum Two-year Outcomes In Primary Robotic-arm Assisted Total Hip Arthroplasty: An Analysis Of Over 500 Hips

Benjamin Domb; David Maldonado; Jeffrey Chen; Cynthia Kyin; Rishika Bheem; Jacob Shapira; Philip Rosinsky

Poster No. 2364

A Method For Intraoperatively Monitoring Cementless Implant Seating

Dustin R. Whitaker; Shouchen Dun; Michael Saloka

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A Method To Recover Trabecular Bone Microstructure From MicroCT Scans Of Decalcified, Paraffin-embedded Bone Samples

Yinyin Liu; Jingyi Wang; Yizhong Hu; X. Edward Guo

Poster No. 2366

Treating Staphylococcus Aureus In Synovial Fluid: A New Application Of The Plant-derived Alkaloid Berberine

Neil Zhao; Dylan Curry; Pallavi Metgud; Noreen Hickok

Poster No. 2367

Post-operative Outcomes Among Diabetic Foot Infection Patients Treated With Intraoperative Vancomycin Powder

James D. Brodell, Jr.; Lauren N. Kozackiewicz; Brian C. Ayers; Edward M. Schwarz; Irvin Oh

Poster No. 2368

Direct Antimicrobial Activity Of Wibu2 Against Staphylococcus Aureus Biofilms Is Enhanced In Physiologic Buffered Saline

Jonathan Mandell; John Koch; Berthony Deslouches; Kenneth Urish

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N-cadherin Deficiency Enhances Response Of Chondrogenic Genes To Mechanical Loading In Chordoma Culture

Yu-Ching Hsu; Changli Zhang; Wai-Kit Tam; Vincent KL Lam; Barbara P. Chan; Victor YL Leung

Poster No. 2370

Cyclic Loading Enhances Nutrient Transport In The Annulus Fibrosus

Elizabeth Capogna; Emma Brown; Evan Walrath; Alton B. Daley; James Lai; Joseph C. Glennon; Eric H. Ledet

Poster No. 2371

Age-related Deficiencies In In Vivo Glucose Uptake Precede Degenerative Changes In A Rat Model

John T. Martin; Satish K. Chitneni; Benjamin A. Alman

Poster No. 2372

Knee Osteoarthritis: A Novel Method Of Volumetric Assessment Of MRI-detected Joint Effusion And Hoffa's Synovitis

Shayan Hosseinzadeh; Stacy E. Smith; Shilpa Pandey; Jeffrey Duryea

Poster No. 2373

Synovitis After Tka: Possible Cause Of Persistent Postoperative Pain

Natsuki Sugimura; Koji Aso; Masashi Izumi; Masahiko Ikeuchi

Poster No. 2374

Development Of Full And Partial Models Of Mid-substance ACL Rupture Using Tibial Displacementdisplacement

Katie J. Sikes; Ariel Timkovich; Joseph Sanford; Kimberli Fernandez; David Joseph Burnett; Emma Hurley; Tammy Haut Donahue; Maryam F. Afzali; Kelly Santangelo

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Celecoxib Delivered Via An Intra-articular Drug-eluting Collagen Membrane Demonstrates Early And Late Reduction In Arthrofibrosis Development In A Validated Rabbit Model

Aaron R. Owen; Jacob W. Bettencourt; Viktor Janz; Afton K. Limberg; Banu Bayram; Louis Dagneaux; Daniel J. Berry; Joaquin Sanchez-Sotelo; Mark E. Morrey; Andre van Wijnen; Matthew P. Abdel

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The Measurement Of Static Relationships Between The Tibia And Femur On MRI After Double-bundle Anterior Cruciate Ligament Reconstruction

Shigehiro Asai; Hideaki Fukuda; Takahiro Ogura; Kenji Takahashi

Poster No. 2377

Tibial Rotation And Knee Flexion Moment Correlate To Patellofemoral Deep Cartilage Ute-t2* 2 Years After ACL Reconstruction

Ashley A. Williams; Jennifer Erhart-Hledik; Jessica L. Asay; Gordhan Mahtani; Constance R. Chu

Poster No. 2378

In Vivo Clearance Of Hyaluronan From The Rat Knee

Thanh N. Doan; Fabrice C. Bernard; Joseph C. Shaver; Jay M. McKinney; J. Brandon Dixon; Nick J. Willett

Poster No. 2379

Assessment Of Biomechanical Functional Evaluation For The Knee

Gabriela E. Zapata; Jamie W. Liu; Alix J. Londo; Peter S. Walker

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Reconstruction Of Passive Knee Flexion Motion Solely From Anatomical Information Using A Rule Based Approach

Neda Abdollahi Nohouji; Jason Halloran; Ahmet Erdemir

Poster No. 2381

Validation Of A New Biplane Depth-camera-based Automated Gait Assessment For A Clinical Setting

Abigail Eustace; J. Bohannon Mason; Casey Myers; Paul Rullkoetter

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Early Low-intensity Ultrasound Treatment Prevents Osteoarthritic Pain In Post-traumatic Osteoarthritis

Wonsae Lee; Elias Georgas; Chaudhry Hassan; David E. Komatsu; Yi-Xian Qin

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Mid-term Results Of Fixed-bearing Medial Onlay Unicompartmental Knee Arthroplasty Using A Robotic-assisted Ligament-guided Approach: Reconsidering Indications

Joost A. Burger; Hendrik A. Zuiderbaan; Laura J. Kleeblad; Andrew D. Pearle

Poster No. 2384

The Knee Joint Meniscus Is A Shock Absorber!

Andreas M. Seitz; Katharina Kreienbaum; Anita Ignatius; Lutz Dürselen

Poster No. 2385

Estrogen Differentially Regulates Gene Expression In Meniscal Fibrochondrocytes Based On Sex And Dosing Kinetics

Kelsey E. Knewton; Jesus G. Gonzalez Flores; Jennifer L. Robinson

Poster No. 2386

Increased Tissue Volume And Collagen Crosslinks Drive Lateral Collateral Ligament Contribution To Post-traumatic Elbow Contracture In A Rat Model

Chelsey L. Dunham; Heiko Steenbock; Jurgen Brinckmann; Alex J. Reiter; Ryan M. Castile; Aaron M. Chamberlain; Spencer P. Lake

Poster No. 2387

Anatomical Limitations Of Long Head Of The Biceps Tendon Tenodesis Using An Interference Screw In Japanese

Naoki Umatani; Ryuzo Arai; Shuichi Matsuda

Poster No. 2388

The Optimal Antibiotic Cement Combination For The Management Of Cutibacterium Acnes-related Prosthetic Shoulder Infection

Amrit V. Vinod; Thomas R. Listopadzki; John K. Crane; Thomas R. Duquin; Sonja Pavlesen; Lin Feng; Matthew J. DiPaola

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Influence Of Fat Infiltration, Tear Size, And Post-operative Tendon Integrity On Contractility Of Repaired Supraspinatus Muscle
Takuma Yuri; Nariyuki Mura; Tomohiro Uno; Ryuta Oishi; Tadashi Koseki; Kyosuke Hoshikawa; Hiromi Fujii; Hugo Giambini; Yoshiro Kiyoshige

Poster No. 2389A

Clinical Outcomes Of Upper Extremity Ambulators Post Reverse Total Shoulder Arthroplasty
Logan Andryk; Benjamin Knight; Dara Mickschl; Steven Grindel

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Glucocorticoids: A Determinant Of Heterotopic Ossification Formation
La Li; Shiqi Xiang; Guorui Cao; Hang Lin; Peter G. Alexander; Rocky S. Tuan

Poster No. 2391

Volumetric Muscle Loss Injury And Reorganization Of The Motor Unit
Sarah M. Greising; Jacob R. Sorensen; Trevor K. Johnson; Daniel B. Hoffman; Benjamin T. Corona

Poster No. 2392

Hypoxia Initiates The Reprogramming Of Muscle Cells In Vitro
Nariaki Nakamura; Haiying Pan; Yong Li

Poster No. 2393

Senotherapeutic Potential Of The Anti-helminthic Drug Niclosamide In Cultured Adipose Derived Stem Cells (adsc) From Aged Human Donors
John W. Mitchell; William Hambright; Anna Laura Nelson; Charles Huard; Michael Mullen; Sudheer Ravuri; Johnny Huard; Matthew Potter

Poster No. 2394

Micro CT Analysis Of The Lumbar Spine Pedicle Isthmus
Tomoyo Y. Irie; Tohru Irie; Alejandro A. Espinoza Orías; Howard S. An; Norimasa Iwasaki; Nozomu Inoue

Poster No. 2395

Changes In Cervical Sagittal Alignment In Patients Presenting With And Without Cervical Pathology: A Radiographic Analysis
Amir Taree; Ivan Ye; Yunsoo Lee; Ray Tang; Samuel Cho

Poster No. 2396

Vertebral Bone Mineral Density Following Lumbar Paraspinal Muscle Botulinum Toxin Type-A Injections
John M. Popovich, Jr.; Darin L. Patmon; Alyssa A. Logan; Nicholas J. Chargo

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Inducible Deletion Of Biglycan Reveals Important Role In Maintenance Of Mechanical Properties During Tendon Aging
Zakary M. Beach; Stephanie N. Weiss; David E. Birk; Louis J. Soslowsky

Poster No. 2398

The Effect Of Fitness And Age On The Gene Expression In Rat Tendons
Manuela Thierbach; Lauren G. Koch; Steven L. Britton; Julia Kirschberg; Michael Schwarzer; Britt Wildemann

Poster No. 2399

Mitochondrial Genes Are Differentially Expressed In Mouse Achilles Tendons During Postnatal Growth And Injury
Ryan C. Locke; Elisabeth A. Lemmon; Megan L. Killian

Poster No. 2400

Epigenome Editing For Endogenous Activation Of Tendon Transcription Factors
Christopher L. Ricupero; Michelle N. Skelton; Charlotte Martin; Solaiman Tarafder; Chang H. Lee

Poster No. 2401

Defining The Temporal Dynamics And Fate Of Proliferative Cell Populations During Tendon Healing
Meghan M. O'Neil; Katherine T. Best; Samantha Muscat; Alayna Loiselle

Poster No. 2402

Hypoxia And Macromolecular Crowding Improve Biomechanical Properties Of Scaffold-free Engineered Tendon Fibers
Michael T.K. Bramson; Kuwabo Mubyana; David T. Corr

Poster No. 2403

A Geometric Nonlinear Finite Element Based Ligament Used For Multibody Knee Simulation
Liang Wang; Alessandro Navacchia; Liz Duxbury; Shawn McGuan

Poster No. 2404

Influence Of Immune System On Osteochondromas
Spencer Richardson; Marie Wehenkel; Emmaline Wittwer; Maureen A. McGargill

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Late Breaking Poster Session 2

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Poster No. 2405

Use Of Machine Learning To Identify Preoperatively If A Shoulder Arthroplasty Patient Will Achieve Clinical Improvement That Exceeds The MCID And SCB Thresholds For Pain Relief, Function, And Range Of Motion

Vikas Kumar; Christopher P. Roche; Steve Overman; Ryan Simovitch; Pierre-Henri Flurin; Thomas Wright; Joseph Zuckerman; Howard Routman; Ankur Teredesai

Poster No. 2406

“Big Data” In Orthopaedics

Gail M. Thornton

Poster No. 2407

Towards Multidimensional Analysis Of Cytometry In Musculoskeletal Injury: Identification Of Novel Cellular Subsets

Richard D. Bell; Takayuki Fujii; Upneet Sokhi; Yun Wei Xia; Xu Yang; David Oliver; Mathias Bostrom; Kyung Hyun Parkmin; Scott Rodeo; Lionel Ivashkiv

Poster No. 2408

Subsurface Alterations And Tribofilm Formation Affect The Tribocorrosion Properties Of Different Titanium Implant Alloys

Mozart Queiroz Neto; Mark Rainforth

Poster No. 2409

Evaluation Of Taper Fretting And Corrosion Damage In Retrieved Reverse Total Shoulder Arthroplasty Components

Corinn K. Gehrke; Jonathan O. Wright; Omar N. Khatib; Ian R. Penvose; J. Michael Wiater; Brett P. Wiater; Erin A. Baker

Poster No. 2410

Effects Of Third Body Wear On Metal Ion Release

Satya Nambu; Anish Shivaram; Gary Hines

Poster No. 2411

A Novel Composite Material For Bone Regeneration: Nanohydroxyapatite (nhap), Synthetic Polymer (pla-peg) And Bone Morphogenetic Protein-2 (rhbm-2)

Zeynep Bal; Takashi Kaito; Hiroyuki Ishiguro; Rintaro Okada; Joe Kodama; Junichi Kushioka; Yuichiro Ukon; Daisuke Tateiwa; Petek Korkusuz; Eda Çiftçi Dede; Hideki Yoshikawa; Feza Korkusuz

Poster No. 2412

Development Of A Dual MicroRNA-scaffold System For Regeneration Of Large Volume Bone Defects

Joanna M. Sadowska; Monika Ziminska; Mark Lemoine; Nicolas Dunne; Helen O. McCarthy; Sam Wojda; Cole Ferreira; Seth Donahue; Caroline M. Curtin; Fergal J. O'Brien

Poster No. 2413

Fracture Process In Bone Cement: XFEM Analysis Of Micro-structured Models With Pores

Sunjung Kim; Heidi-Lynn Ploeg; Shiva Rudraraju

Poster No. 2414

Increases In Osteoclastogenesis And Resorption Are Induced By Estrogen-deficient Osteocytes Due To Altered Paracrine Signaling But Can Be Reverted By Sclerostin Inhibition In Vitro

Hollie Allison; Gill Holdsworth; Laoise M. McNamara

Poster No. 2415

Effect Of Wnt16 On Bone Quality In Rapid Growth Period—A Clinical Study On Adolescent Idiopathic Scoliosis And Wnt16 Ko Animal Study.

Ka Lo Cheng; QiangQiang Li; Yujia Wang; Jiajun Zhang; Tsz-ping Lam; Jack CY Cheng; Wayne YW Lee

Poster No. 2416

Nell-1 Inactivation In Osteoblasts Causes Hemifacial Microsomia And Postcranial Osteoporosis

Shannon Y. Wu; Luan Tran; Xiangyou Luo; Stella Dong; Minsub Lee; Taylor Lee; Phillip Tran; Brian Hom; Chia Soo; Jin Hee Kwak

Poster No. 2417

Osteocyte Cholinergic Receptors Are Important For The Development Of Normal Skeleton

Karl J. Lewis; Thomas A. Hess; Alexander G. Robling

Poster No. 2418

Mapping The Fate Of Periosteal Ctsk+ Stem Cells In SHP2 Mutant Mice

Christian M. Shigley; Jiahui Huang; Lijun Wang; Liang Wang; Mark Dooner; Douglas C. Moore; Wentian Yang

Poster No. 2419

Reduced Angiogenesis And Delayed Endochondral Ossification During Fracture Healing In Cd163-/- Mice Highlights A Role For Macrophages In Ros Clearance During Bone Repair

Shiyang Zhang; Bin He; Yugo Morita; Edward M. Schwarz; Chao Xie

Poster No. 2420

Diversity Of Osteoprogenitor Cells Within The Periosteum

Brya G. Matthews; Sanja Novak; Ye Cao; Francesca V. Sbrana; Laura C. Shum; Ivo Kalajzic

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Poster No. 2421

Incorporation Of Allograft Chips In Acetabular Reconstruction

Tim Rolvien; Michael Hahn; Klaus Püschel; Simon von Kroge;
Julian Stürznickel; Frank Timo Beil; Thorsten Gehrke; Michael Amling;
Sebastian Butscheidt

Poster No. 2422

Injection Of Recombinant Human Bone Morphogenetic Protein-2-loaded Artificial Collagen-like Peptide Accelerates Consolidation And Bone Union At The Docking Site In A Mouse Segmental Bone Transport Model

Ryo Tazawa; Hiroaki Minehara; Terumasa Matsuura; Tadashi Kawamura;
Kentaro Uchida; Gen Inoue; Masashi Takaso

Poster No. 2423

Evaluation Of The Pre-osteoblastic Cell Response On Hydroxyapatite Coated Peek And Titanium Alloy Surfaces

Kadie Nobles; Pallabi Pal; Amol V. Janorkar; Randall S. Williamson

Poster No. 2424

Comparison Of Sign Implants In Treatment Of Closed Distal Femur Fractures In A Rural Hospital In Tanzania

James Allen; Samuel Kiewsa

Poster No. 2425

Assessment Of Sacral Bone Density For Fracture Fixation

Simran Mand; Scott Telfer; Christina Brunnquell; Ken Linnau;
David Zamora; Conor Kleweno

Poster No. 2426

Associations Between Hip Muscle And Intramuscular Fat Area With MR-FE Derived Failure Load Of The Proximal Femur

Kadin Majcher; Saija Kontulainen; David Leswick; James Johnston

Poster No. 2427

Longitudinal Analysis Of 3D Patella And Trochlear Bone Shape On Patellofemoral Joint Osteoarthritis

Tzu-Chieh Liao; Radhika Tibrewala; Valentina Pedoia; Thomas M. Link;
Sharmila Majumdar; Richard B. Souza

Poster No. 2428

Expression Of Pain-related Molecules During Fracture Healing In The Callus In A Fracture Model In Aged Mice

Hirofumi Sekiguchi; Kentaro Uchida; Shintaro Shoji; Gen Inoue;
Jun Aikawa; Mitsufumi Nakawaki; Ryo Tazawa; Wataru Saito;
Masayuki Miyagi; Masashi Takaso

Poster No. 2429

Changes In Bone Mineral Density And Pain-related Behavior In Neighboring Joints Of Adjuvant Arthritis Model

Norihiro Mayumi; Hiroki Wakabayashi; Gaku Miyamura; Akihiro Sudo

Poster No. 2430

The Visual-assisted (VA) Method Improves Navigation And Resection Accuracy For Orthopedic Surgery

Guangyu He; Vamiq M. Mustahsan; Amos Z. Dai; Christopher L. Blum;
Fazel Khan; Imin Kao

Poster No. 2431

Differences In Subchondral And Trabecular Bone Response To Increased Mechanical Loading

Hyunggwi Song; John D. Polk; Mariana E. Kersh

Poster No. 2432

Withdrawn

Poster No. 2433

Characterization Of Extracellular Vesicles Secreted By Human Mesenchymal Stem Cells Cultured Under Chondrogenic Stimulus With Or Without Hypoxic Challenge

Elisabeth Ferreira; Landon B. Gatrell; Ryan M. Porter

Poster No. 2434

Local And Sustained Delivery Of Recombinant Nerve Growth Factor Promotes Endochondral Fracture Repair By Inducing Cd31 Cell Infiltration And Activating Wnt Signaling In Hypertrophic Cartilage

Kevin O. Rivera; Fabrizio Russo; Ryan Boileau; Tejal A. Desai;
Chelsea S. Bahney

Poster No. 2435

Comparison Of 3D Printed Rough Titanium, Smooth Titanium And Peek Surfaces On Osteoblastic Gene Expression

David Rowe; Xianan Xin; Brent Atkinson; Tim Ganey

Poster No. 2436

Role Of Smoothed Agonist In Growth Factor Mediated Bony Union Of Mandibular Defect

Logan F. McColl; Xizhao Chen; Sean Haughey; Harrison Bartels;
Gina Beck; Kailo Schlegel; Matthew Q. Miller; Peter Lobo;
Jared Christophel; Abhijit S. Dighe; Quanjun Cui

Poster No. 2437

Local And Systemic Biomarkers Of Synovial Joint Disease In Mucopolysaccharidosis VII Dogs

Rahul Gawri; Yian K. Lau; George Dodge; Carla R. Scanzello; Wilfried Mai;
Margret L. Casal; Lachlan J. Smith

Poster No. 2438

Long Noncoding RNA Expression Profiling By RNA-sequencing In Osteoarthritis Cartilage

Marcella van Hoolwerff; Paula M. Metselaar;
Rodrigo Coutinho de Almeida; Margo Tuerlings; Eka G.H.H. Suchiman;
Nico Lakenberg; Rob G.H.H. Nelissen; Yolande F.M. Ramos;
Ingrid Meulenbelt

Poster No. 2439

Assessing Trypsin And Collagenase Degradation As In Vitro Models For Osteoarthritis Via Second Harmonic Generation Microscopy

Alexander N. Jambor; Emily M. Shelton; Richard Kijowski;
Corinne R. Henak; Paul J. Campagnola

Poster No. 2440

A Transgenic Rat For Noninvasive Assessment Of Chondrogenic Activity In Vivo

Elisabeth Ferreira; Landon B. Gatrell; Ryan M. Porter

Poster No. 2441

The Change Of Subchondral Bone Between Guinea Pig Idiopathic Osteoarthritis And Guinea Pig Post Traumatic Osteoarthritis

Yang Zhang; Jeffery Yu; Can Cao; Lei Wei

Poster No. 2442

Integrin A1b1 Is Critical For Primary Cilia Lengthening Following Exposure Of Ex Vivo Chondrocytes To Interleukin-1

Lauren Stam; Ambra Pozzi; Andrea L. Clark

Poster No. 2443

Cyclic Stretching Of Synovial Fibroblasts Impacts Hyaluronan Synthesis

Meghana Pendyala; Deva D. Chan

Poster No. 2444

Estimation Of Constituent-specific Mechanical Material Properties Of Human Articular Cartilage From Near-infrared Spectroscopy

Petri Tanska; Mithilesh Prakash; Janne T.A. Mäkelä; Jaakko K. Sarin;
Juha Töyräs; Isaac O. Afara; Rami K. Korhonen

Poster No. 2445

Intraarticular Thermoresponsive Dexamethasone Prodrug Ameliorates Arthritis Pain And Avoids Systemic Toxicity

Gang Zhao; Rongguo Ren; Xin Wei; Ningrong Chen; Zhenshan Jia;
Yuanyuan Sun; Steven R. Goldring; Dong Wang

Poster No. 2446

Osteochondral Defect Repair Using A Novel Synthetic Cartilage Implant Anchored Through In Situ Photocured Bone Cement—A Long-Term Fixation Assessment

David A. Bichara; Shimon Unterman; Mary Beth Schmidt

Poster No. 2447

NsAids May Reduce Efficacy Of Mesenchymal Stem Cell Therapy In A Rodent Model Of Post-traumatic Osteoarthritis

Daniel Sok; Jarred Kaiser; Sarvagna Raval; Nick Willett

Poster No. 2448

The Influence Of Gelatin Hydrogel Including Eicosapentaenoic Acid On The Osteoarthritis Progression In Vivo

Masanori Tsubosaka; Shinya Hayashi; Shinsuke Kihara; Yoshinori Takashima; Tomoyuki Kamenaga; Kenichi Kikuchi; Masahiro Fujita;
Koji Takayama; Shingo Hashimoto; Tomoyuki Matsumoto;
Yasuhiko Tabata; Ryosuke Kuroda

Poster No. 2449

Assessment Of Chemically-induced Hypoxia To Enhance Chondrogenic Pellet Differentiation

Alyssa N. Veneziale; Jessica M. Falcon; Nancy Pleshko

Poster No. 2450

Loading History Modulates Persistence Of Msc Gene Expression And Emergent Fate Decisions

Eric Dai; Robert Mauck

Poster No. 2451

Geographical And Chronological Patterns Of Adolescent Idiopathic Scoliosis Treatment In New York State

Justice U. Achonu; Ki Oh; Sina Rashidian; Fusheng Wang;
David E. Komatsu; James Barsi

Poster No. 2452

Time To Achieve Patient Satisfaction Anchor-based Thresholds Of MCID & SCB With Shoulder Arthroplasty

Christopher P. Roche; Pierre-Henri Flurin; Thomas Wright;
Joseph Zuckerman; Ryan Simovitch

Poster No. 2453

Surgeon-placed Continuous Adductor Canal Block After Total Knee Arthroplasty: A Technique Guide And Retrospective Outcomes Study

Jessica Block; Jeffrey Jancuska; Sonja Pavelsen; Sridhar Rachala

Poster No. 2454

Is Robotic-Arm Assisted Total Hip Arthroplasty More Costly Than Manual Total Hip Arthroplasty? A Comparative Cost-Minimization Analysis Using Markov Model

Benjamin Domb; David Maldonado; Cynthia Kyin; Camille Go;
John Walsh

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Poster No. 2455

Do “Bone-preserving” Femoral Prostheses Conserve Bone? A Randomized Clinical Trial Of The Tri-lock Versus Corail Prostheses

Mohit Mahatma; Pablo Slullitel; Mohsen Farzi; Cheryl Kreviazuk; Johanna Dobransky; Alex Frangi; George Grammatopoulos; J. Mark Wilkinson; Paul E. Beaulé

Poster No. 2456

Three-dimensional Syndesmosis Kinematics Using Dynamic CT

Murray T. Wong; Charmaine Wiens; Sahil Kooner; Richard Buckley; Paul Duffy; Robert Korley; C. Ryan Martin; David Sanders; W. Brent Edwards; Prism Schneider

Poster No. 2457

Total Ankle Replacement In-vivo Kinematics During Walking: A Dual Fluoroscopy Study

Amy L. Lenz; Rich J. Lisonbee; Andrew C. Peterson; Alexej Barg; Koren E. Roach; K. Bo Foreman; Andrew E. Anderson

Poster No. 2458

Efficacy Of Bioabsorbable Materials For Treatment Of Moderate To Severe Hallux Valgus Absorbable Materials For Hallux Valgus

Jae Hwang Song; Kang Chan; Do-Kyung Lee

Poster No. 2459

Biomechanical Comparison Of 5th Metatarsal Hook Plates Versus Headless Compression Screws For Fixation Of Zone 1 Fractures Of The 5th Metatarsal Base

Bryan Bean; Niall Smyth; Pooyan Abbasi; Brent Parks; Walter Hembree

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Gene Therapy Promotes Rapid Functional Recovery After Rat Sciatic Nerve Transection

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