# SCIENTIFIC





## INTERNATIONAL CONFERENCE ON ORTHOPEDICS AND MUSCULOSKELETAL DISORDERS





November 13-14, 2025 Lisbon, Portugal



# International Conference on Orthopedics and Musculoskeletal Disorders

**THURSDAY** 

## November 13-14, 2025 | Lisbon, Portugal

Registrations & Opening Remarks (09:00-10:00)

	Registrations & Opening Remarks (09:00-10:00)
	Keynote Presentation (10:00 - 11:00)
10.00 10.20	Title: Lumbosacral zone features in individuals with nonspecific low back pain are unique compared to controls and correlate with pain and dysfunction
10:00-10:30	Prof. Masharawi Youssef, Physical Therapy Department, The Stanley Steyer School of Health Profession, Gray Faculty of Medical and Health Sciences, Tel Aviv University, Israel
	Title: Microglial Cells and Their Role in Neuropathic Pain: A Review
10:30-11:00	<b>Dr. Miltiades Y Karavis,</b> President of Hellenic Medical Acupuncture Society - Pain specialist, Greece
	REFRESHMENT BREAK & GROUP PHOTO (11:00-11:20)
	Technical Session-I (11:20 - 13:00)
	Title: Mental Fatigue in Patients with Hearing Loss and/or Tinnitus
11:20-11:45	Undergoing Audiological Rehabilitation – A Pilot Study  Dr. Sten Hellstrom, Karolinska Institute, Sweden
	Title: Cellular Senescence in Metabolic Syndrome-Associated Osteoarthritis
11:45-12:10	Prof. Mei Wan, Johns Hopkins University, United States
12.10 12.25	Title: Prolonged incubation time unwarranted for acute periprosthetic joint infections
12:10-12:35	Dr. Elizabeth Morreel, Maastricht UMC+, Netherlands
12:35-13:00	Title: STMIPO Technique in the Treatment of Diaphyseal and Distal Tibial Fractures: A Retrospective Study of 57 Patients
12:35-13:00	Dr. Quankui Zhuang, No 2 people's hospital of Fuyang city, China
	Lunch @ Restaurant (13:00- 14:00)
	Technical Session- II (14:00-16:05)
	Title: Change in the activity of the upper and lower esophageal sphincter during changes in respiratory and postural conditions
14:00-14:25	Dr. Petr Bitnar, Charles University Prague, Czech Republic
14:25-14:50	Title: The role of self-management in the training of mobility after stroke: a pilot study  Dr. Ahmad-Sahely, Jazan University, Saudi Arabia



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14.50 15.15	Title: Association between the rs820218 Variant within the SAP30BP Gene and Rotator Cuff Rupture in an Amazonian Population
14:50-15:15	Dr. Rui Sergio Monteiro de Barros, State University of Pará, Brazil
15:15-15:40	Title: Innovative Application of the LIC TRAINER for Respiratory Rehabilitation in Neuromuscular Disorders
	Dr. Hiroyasu Inoue, Showa Medical University, Japan
	Title: Exercise can show its antidepressant effects through kisspeptin
15:40-16:05	Prof. Haluk Kelestimur, Istanbul Okan University, Turkey
	REFRESHMENT BREAK (16:05-16:25)
16:25-16:50	Title: Using virtual reality in physiotherapy for women with urinary incontinence
	Dr. Gabriela Kolodynska, Wroclaw University of Health and Sport Sciences, Poland
16:50-17:15	Title: Aetiopathogenesis of Rotator Cuff Tear in Patients Younger than 50 Years: Medical Conditions Play a Relevant Role Prof. Vincenzo Campagna, Military Hospital of Rome, Italy
17:15-17:40	Title: Treatment of Osteoporotic Vertebral Fractures: Diagnostic and Therapeutic Considerations  Dr. Dario Kalacun, General and Teaching Hospital Celje, Slovenia
17:40-18:05	Title: Microbiome features associated with performance in an athletic cohort and nonathletic controls  Dr. Kinga Humińska-Lisowska, Gdansk University of Physical Education and Sport, Poland
18:05-18:30	Title: Comparative Effectiveness of Artificial Intelligence-Assisted 3D Printed Customized Knee Brace and Exercise Therapy Versus Conventional Electrotherapy in Ergonomical Knee Pain: A Randomized Controlled Study  Prof. S Purna Chandra Shekhar, MNR University, India
	Pannel Discussions

#### **Pannel Discussions**

#### Day-1 Concludes

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	Technical Session- I (10:00-12:50)
10:00-10:25	Title: How Should We Measure Inter-Recti Distance Using Ultrasound Imaging? Findings from a Scoping Review and Recommendations for Practice  Prof. Agnieszka Opala-Berdzik, Academy of Physical Education in Katowice, Poland
10:25-10:50	Title: Investigating the experience of people with oral difficulties as a result of peripheral facial palsy  Mrs. Rebecca Kimber, University College Hospital London (NHS), United Kingdom
R	EFRESHMENT BREAK & GROUP PHOTO (10:50-11:10)
11:10-11:35	Title: Applicability of an unstable platform integrated with virtual reality in the rehabilitation of postural control  Mr. Dalton Kina, University of Saeo Paulo School of Medicine, Brazil
11:35-12:00	Title: Recovery from Exercise in Persons with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)  Prof. Betsy Keller, PaceForward Foundation, Ithaca College, United States
12:00-12:25	Title: Comparison of Clinical and Functional Outcomes in Patients Operated with Standard Offset Stem versus High Offset Stem in Total Hip Replacement: A Retrospective Study
	<b>Dr. Siddharth Rajendra Gunay,</b> Clinical Fellow in Arthroplasty & Sports Medicine, India
12:25-12:50	Title: Relationship between lean body mass and motor function in ambulant patients with Duchenne muscular dystrophy  Dr. Agnieszka Sobierajska-Rek, Medical University of Gdansk, Poland
	Lunch @ Restaurant (12:50-13:50)

#### Poster Presentation (13:50-14:15)

Title: No Effect of Shockwave and Ultrasound Therapy on Jump Performance and Kinesthetic Differentiation Ability in Patients with Achilles Tendinopathy: A Pilot Study

P1 ---Dr. Magdalena Stania, Academy of Physical Education in Katowice, Poland

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P2	Title: Pathological Classification of Idiopathic Carpal Tunnel Syndrome Based on Transthyretin Amyloid Deposition in the Synovium
	Dr. Yoshiaki Yamanaka, University of Occupational and Environmental Health, Japan
Р3	Title: Tuberculous Osteomyelitis of the Coracoid Process Presenting as Shoulder Pain: A Case Report
	<b>Dr. Siddharth Rajendra Gunay,</b> Clinical Fellow in Arthroplasty & Sports Medicine, India
	Technical Session- II (14:15-17:30)
44474440	Title: Reliability and Validity of the Lowenstein Communication Scale
14:15-14:40	Ms. Orin Yardeni, Loewenstein Rehabilitation Medical Center, Israel
	Title: Progress in Dentin-Derived Bone Graft Materials: A New Xenogeneic Dentin-Derived Material with Retained Organic Component Allows for Broader and Easier Application"
14:40-15:05	Dr. Lari Sapoznikov, Private Clinic in Tel Aviv, Israel
15:05-15:30	Title: Standardizing Clerking Practice: An Orthopaedic Audit of Hip Fracture Proforma Compliance Dr. Saarah Talha, Royal Shrewsbury Hospital, United Kingdom
15:30-15:55	Title: A Different Type of Tennis Elbow: Spontaneous Septic Arthritis of the Elbow in a Previously Heathy 40-Year-Old Male
	Dr. Adriana M. Mercado Rodríguez, Ponce Health Sciences University, Puerto-Rico
	Refreshment Break (15:55-16:15)
	Title: Ultrasound Shear Wave Elastography to Assess Adult Skeletal Muscles
16:15-16:40	Prof. Jing Gao, Rocky Vista University, USA
16:40-17:05	Title: Effect of Elastic Resistance on Scapular Kinematics During Overhead Squats: Implications for Shoulder Stability and Rehabilitation
	Mr. Fagner Luiz Pacheco Salles, University of Lisbon, Portugal
17:05-17:30	Title: Fostering Person-Centred Care in Physiotherapy Rehabilitation Practice
	<b>Prof. Margarida Santos,</b> School of Health and Technology, Polytechnic Institute of Lisbon, Portugal

#### Closing remarks

#### Day-2 Concludes





Join Zoom Meeting

Meeting ID: 826 8754 9103

Passcode: Urf@2025

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09:50-10:00 (E-Poster)	Title: Quantitative Evaluation of Surface Electromyography on Upper Limb Dystonia after Stroke  Dr. Fan Jiang, Department of Neurology, Shapingba Hospital affiliated to Chongqing University (Shapingba District People's Hospital of Chongqing), Chongqing, 400030, China
10:00-10:25	Title: Effectiveness of Home-Based Circuit Training on Body Mass Index, Biochemical Parameters, and Musculoskeletal Fitness in Overweight or Obese Adults with Knee Osteoarthritis and Type 2 Diabetes Mellitus  Dr. Wan Syaheedah Wan Ghazali, Universiti Sains Malaysia, Malaysia
10:25-10:50	Title: LUtarjet- Limit Unique Coracoid Osteotomy Suture Button Latarjet  Prof. Wei Lu, Shenzhen Hospital of Southern Medical University, China
10:50-11:15	Title: Primary Aneurysmal Bone Cyst of Sacrum: A Case Report of a 12 years old boy from Pakistan  Dr. Arham Amir Khawaja, Shaikh Zayed Medical Complex lahore, Punjab, Pakistan
11:15-11:40	Title: The effectiveness of radial shockwave therapy on myofascial pain syndrome: a two-armed, randomized double-blind placebo-controlled trial  Dr. Collins Ogbeivor, King Faisal Specialist Hospital, Saudi Arabia
11:40-12:05	Title: The effect of game-based intervention on locomotor skills of female students aged 9–11 years with flat foot  Dr. Ebrahim Ebrahimi, University of Tehran, Iran
12:05-12:30	Title: Potential Use of a New Energy Vision (NEV) Camera for Diagnostic Support of Carpal Tunnel Syndrome: Development of a Decision-Making Algorithm to Differentiate Carpal Tunnel-Affected Hands from Controls Dr. Hamza Murad, Rabin medical center, Israel
12:30-12:55	Title: Effects of perceptive rehabilitation and mobilization methods on symptoms and disability in patients with fibromyalgia: A Randomized Controlled Trial  Dr. Beraat Alptug, European University of Lefke, Turkery
12:55-13:20	Title: Effect of Pulmonary Rehabilitation and Inspiratory Muscle Training on Patients With Unilateral Diaphragmatic Eventration  Dr. Amal Albatini, Universidad de CÃidiz, Kuwait

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13:20-13:45	Title: Implementation of digital technology in the service of health protection for long-term care users  Dr. Ivana Crnković, University of Applied Health Sciences, Croatia
13:45-14:10	Title: Inclusive Tourism as a Form of Physical Activity and Rehabilitation: Accessibility of Main Tourist Attractions in the Świętokrzyskie Region, Poland Ms. Klaudia Chwaja, University of Culture Physical in Kraków, Poland
14:10-14:35	Title: Burden of Knee Osteoarthritis in South Asia, 1990–2021: Findings from the Global Burden of Disease Study  Dr. Muhammad Tayyab, Bradford Teaching Hospitals NHS Trust, United Kingdom
14:35-15:00	Title: Raising the Standard: Improving Surgical Risk Documentation in Trauma and Orthopaedics  Mr. Benjamin Smith, Royal Shrewsbury Hospital, United Kingdom
15:00-15:25	Title: First Case of Calcaneal Brodie's Abscess Caused by Fusobacterium Nucleatum in an Immunocompetent Adult  Dr. Zain Al Abdeen Al Zuabi, Paradise house, United Kingdom
15:25-15:50	Title: Comparison of outcomes between resurfaced and unresurfaced patella in total knee arthroplasty using medial congruent liners: a retrospective study  Dr. Johannes Van Der Merwe, University of Saskatchewan, Canada
15:50-16:15	Title: RNase L represses hair follicle regeneration through altered innate immune signaling Dr. Sashank Reddy, Johns Hopkins University, United States
16:15-16:40	Title: Patellofemoral Pain: Hip Muscle Activation and Kinematics with Exercise and External Support  Dr. David M. Selkowitz, MGH Institute of Health Professions, United States
16:40-17:05	Title: Transdermal Delivery of Botulinum Neurotoxin A: A Novel Formulation with Therapeutic Potential  Dr. Raj Kumar, Institute of Advanced Sciences, United States

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17:05-17:30	Title: Tear Area Predicts Natural History of Rotator Cuff Degeneration: A Retrospective Study of Supraspinatus Tear Progression
	Prof. Ara Nazarian, BIDMC, HMS, United States
17:30-17:55	Title: The Pharmacists of Physical Activity: Physiotherapists and the provision of practical strategies to meet and exceed worldwide standards  Dr. Mike Studer, Touro University Nevada, United States
17.55.10.20	Title: Neuromodulation in multi-functional rehabilitation for patients with spinal cord injury
17:55-18:20	Prof. Alexander Ovechkin, University of Louisville, United States

Closing remarks

Day-2 Concludes

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**Karavis M**, Karavis Y, Siafaka I, Vadalouka A, GeorgoudisG Athens, Greece

#### Microglial Cells and Their Role in Neuropathic Pain: A Review

Microglial cells are specialized macrophages of the central nervous system (CNS), playing a crucial role in the innate immune defense of the brain and spinal cord. They protect neural tissue from pathogens, trauma, demyelination, and help eliminate defective neurons and other cellular debris. To fulfill these roles, microglia possess a wide array of receptors and chemical mediators that allow for rapid and specific communication with other cells in the nervous system. In vivo studies using enhanced green fluorescent protein (eGFP) as a marker for microglial surveillance have demonstrated that microglial cells play a vital and dynamic physiological role. They are actively involved in processes such as synaptic pruning, synaptogenesis, neurogenesis, neuronal apoptosis, and the regulation of neuronal longevity. The involvement of microglia in neuropathic pain has challenged the traditional view that neurons alone are responsible for the pathophysiological changes underlying this condition. Injuries to either the peripheral or central nervous system can trigger maladaptive changes in both neurons and microglial cells. In the context of neuropathic pain, microglia play a pivotal role in both the initiation and persistence of pain and inflammation. Their interactions with neurons are now recognized as essential contributors to the development of chronic pain. Recent research has increasingly underscored the pivotal role of microglia in the structural remodeling of the nervous system, including the spinal cord and the brain's pain pathways. Investigating the individual mechanisms at the spinal and brain levels remains a compelling and evolving area of research. A deeper understanding of the cellular and molecular dialogue between neurons and microglia may uncover new therapeutic avenues, positioning microglial cells as promising targets for the treatment of neuropathic pain. An especially promising development is the creation of new, cutting-edge therapies for chronic neuropathic pain—medications that differ significantly from those used in current clinical practice.

#### Keywords

Microglia, microglial cells, neuropathic pain, neuroinflammation

#### **Biography**

Dr. Miltiades Y. Karavis specialized in Physical Medicine and Rehabilitation in 1995 and earned a Master of Science degree in Algology and Pain Management from the National and Kapodistrian University of Athens (2017–2019). Since 1992, he has served as the Scientific Director of the International Postgraduate Center of Acupuncture – AcuScience – in Athens, and he is also the President of the Hellenic Medical Acupuncture Association. He has been an invited speaker in many universities: Athens, New York (Columbia University), Copenhagen, Sofia, Lithuania, Switzerland, and Barcelona, presenting on the scientific and integrative dimensions of pain management and acupuncture. He has authored numerous articles and six books on topics including medical acupuncture, neural acupuncture, electroacupuncture, and auricular acupuncture. His recent work on neuroinflammation, microglia, and neuropathic pain has drawn particular attention.

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Weiping Su<sup>1</sup>, Bahram Mohajer<sup>2</sup>, Kangping Song<sup>1</sup>, Xu Cao<sup>1</sup>, Shadpour Demehri<sup>2</sup>, **Mei Wan**<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, <sup>2</sup>Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, United States

#### Cellular Senescence in Metabolic Syndrome-Associated Osteoarthritis

Metabolic syndrome-associated osteoarthritis (MetS-OA) is a distinct osteoarthritis phenotype defined by the coexistence of MetS or its individual components. Despite the high prevalence of MetS-OA, its pathogenic mechanisms are unclear. In the present study, we report that humans and mice with MetS are more likely to develop osteoarthritis-related subchondral bone alterations than those without MetS. MetS-OA mice exhibited a rapid increase in joint subchondral bone plate and trabecular thickness before articular cartilage degeneration. Subchondral preosteoclasts undergo senescence at the pre- or earlyosteoarthritis stage and acquire a unique secretome to stimulate osteoblast differentiation and inhibit osteoclast differentiation. Antagonizing preosteoclast senescence markedly mitigates pathological subchondral alterations and osteoarthritis progression in MetS-OA mice. At the molecular level, preosteoclast secretome activates COX2-PGE2, resulting in stimulated differentiation of osteoblast progenitors for subchondral bone formation. Administration of a selective COX2 inhibitor attenuated subchondral bone alteration and osteoarthritis progression in MetS-OA mice. Longitudinal analyses of the human Osteoarthritis Initiative (OAI) cohort dataset also revealed that COX2 inhibitor use, relative to nonselective nonsteroidal anti-inflammatory drug use, is associated with less progression of osteoarthritis and subchondral bone marrow lesion worsening in participants with MetS-OA. Our findings suggest a central role of a senescent preosteoclast secretome-COX2/PGE2 axis in the pathogenesis of MetS-OA.

#### **Biography**

Mei Wan, Ph.D. is Frank J. Frassica Professor at the Department of Orthopaedic Surgery in Johns Hopkins University School of Medicine. Dr. Wan's research focuses on the contribution of fundamental aging processes, particularly cellular senescence, to bone health and disease. Another line of Dr. Wan's research is to understand the mechanisms by which the bone-derived cues regulate the aging process of other organs such as vascular system and brain. The impact of Dr. Wan's research extends across different disciplines as testified by her publication record, which includes papers in Cell Metabolism, Nature Communications, Journal Clinical Investigation, Gene & Development, PNAS, Bone Research, etc. Her research program has been continuously funded by NIH. Dr. Wan served on the editorial boards of two leading skeletal-related journals, JBMR and Bone Research. Since 2021, she serves on the Reviewing Editor Board of eLife.

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#### **Elizabeth Morreel**

Department of Medical Microbiology, Infectious Disease and Infection prevention, Maastricht UMC+, Maastricht, The Netherlands

#### Prolonged incubation time unwarranted for acute periprosthetic joint infections

Current laboratory protocols for diagnosing periprosthetic joint infections (PJIs) typically involve a 10- to 14-day incubation period for cultures. However, this timeframe may not be necessary for all cases. We retrospectively reviewed 187 confirmed hip and knee PJIs—each with  $\geq 3$  intraoperative samples—to assess time to diagnosis (TTD) based on clinical presentation and microbiological methods. PJIs were categorized as early acute (n=68), late acute (n=52), or late chronic (n=67). Nearly all early acute (97.1%) and late acute (98.1%) PJIs were diagnosed within 5 days, compared to 14 days for 97.1% of late chronic infections (P < 0.004). These findings suggest that incubation beyond 5 days may be unnecessary for acute presentations. Importantly, enriched liquid media—especially blood culture bottles and sonication fluid—significantly improved detection rates, particularly in polymicrobial and anaerobic infections. Pediatric and anaerobic blood culture bottles outperformed traditional thioglycolate broths, and sonication fluid cultures were critical in confirming the diagnosis in 17.6% of cases. Our findings support a more individualized approach: incubation time should be guided by clinical presentation rather than time since arthroplasty. Shortening the incubation period for acute PJIs could accelerate diagnosis and streamline patient management. Additionally, using blood culture bottles and sonication fluid enhances diagnostic accuracy, especially in complex infections.

#### **Keywords**

periprosthetic joint infection, time to diagnosis, acute, chronic, culture, sonication

#### **Biography**

Elizabeth Morreel studied medicine in Antwerp from 2013-2019. Subsequently, she started her specialisation as a clinical microbiologist at the MUMC+. In 2023, she also started PhD research within the NWO project DARTBAC, on the topic of optimisation of diagnostics for prosthesis-associated infections. Since 2024, she has been appointed as a staff member within the Department of Medical Microbiology, Infectious Diseases and Infection Prevention at MUMC+, with focus area device and implant related infections.

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### Quankui Zhuang¹, Wei Li¹

<sup>1</sup>Department of orthopedic, No 2 people's hospital of Fuyang city, Yingzhou district, Fuyang city, Anhui province, 23600,China

## STMIPO Technique in the Treatment of Diaphyseal and Distal Tibial Fractures: A Retrospective Study of 57 Patients

#### **Background**

STMIPO (Second To Minimally Invasive Plate Osteosynthesis) is an emerging technique for treating limb fractures, combining the advantages of MIPO (Minimally Invasive Plate Osteosynthesis) and ORIF (Open Reduction and Internal Fixation). This study primarily evaluates the clinical efficacy of the STMIPO technique in treating diaphyseal and distal tibial fractures.

#### Methods

This study retrospectively analyzes 57 cases of diaphyseal and distal tibial fractures treated with the STMIPO technique at our orthopedic department between January 2021 and January 2023. Among these cases, there were 38 males and 19 females. All tibial fractures were classified according to the AO classification. During surgery, we recorded the operation time (from skin incision to closure), length of the surgical incision, intraoperative blood loss, and the number of fluoroscopic images taken. Postoperatively, we evaluated fracture healing and the occurrence of relevant surgical complications.

#### Results

All patients with tibial fractures achieved osseous union, with an average bone healing time of  $16.72 \pm 1.16$  weeks. The average postoperative follow-up time was  $18.65 \pm 2.81$  months. The average surgical time was  $42.61 \pm 3.01$  minutes, the average incision length was  $3.91 \pm 0.79$  cm, the average intraoperative blood loss was  $15.96 \pm 1.66$  ml, and the average number of fluoroscopic images taken was  $3.11 \pm 0.75$ . There were no intraoperative instances of surgeon exposure to fluoroscopy. One patient with a distal tibial fracture was unable to complete the STMIPO procedure during surgery and was converted to ORIF based on the STMIPO incision. Additionally, one case involved plate exposure with a subsequent soft tissue infection, which was managed with plate removal, debridement, suturing, and external fixation using the removed plate.

#### Conclusion

STMIPO technology is a safe, effective, and minimally invasive surgical treatment option that is easy to perform and well-suited for the management of diaphyseal and distal tibial fractures.

#### Keywords

tibial diaphyseal fractures, tibial distal fractures, STMIPO, MIPO, ORIF

#### **Biography**

Chief Physician, Doctor of Medicine, Administrative Director of Orthopedics. With over 30 years of experience in the orthopedic field, Dr. Zhuang has accumulated extensive clinical experience and research achievements. He mainly focuses on trauma care in orthopedics, particularly in minimally invasive techniques for fracture treatment. Dr. Zhuang proposed the STMIPO theory, specifically designed for the treatment of limb fractures, providing new insights for the clinical management of fractures.

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Rui Sergio Monteiro de Barros, Carla de Castro Sant' Anna, Diego Di Felipe Ávila Alcantara, Karla Beatriz Cardias Cereja Pantoja, Marianne Rodrigues Fernandes, Lívia Guerreiro de Barros Bentes, Antônio Leonardo Jatahi Cavalcanti Pimentel, Rafael Silva Lemos, Nyara Rodrigues Conde de Almeida, Manuela Rodrigues Neiva Fernandes 2, Thiago Sequeira da Cruz 2, Atylla de Andrade Candido and Rommel Mario Rodriguez Burbano

Universidade do Estado do Pará, Belém, Pará, Brazil.

## Association between the rs820218 Variant within the SAP30BP Gene and Rotator Cuff Rupture in an Amazonian Population

#### Background

Rotator cuff disease is one of the leading causes of musculoskeletal pain and disability, and its etiology is most likely multifactorial but remains incompletely understood. Therefore, the objective of this research was to investigate the relationship of the single-nucleotide rs820218 polymorphism of the SAP30-binding protein (SAP30BP) gene with rotator cuff tears in the Amazonian population.

#### Methods

The case group consisted of patients who were operated on due to rotator cuff tears in a hospital in the Amazon region between 2010 and 2021, and the control group was composed of individuals who were selected after negative physical examinations for rotator cuff tears. Genomic DNA was obtained from saliva samples. For the genotyping and allelic discrimination of the selected single nucleotide polymorphism (rs820218) in the SAP30BP gene, real-time PCR was performed.

#### Results

The frequency of the A allele in the control group was four times as high as that in the case group (AA homozygotes); an association of the genetic variant rs820218 of the SAP30BP gene with rotator cuff tears was not established (p = 0.28 and 0.20), as the A allelic frequency is ordinarily low in the general population.

#### Conclusions

The presence of the A allele indicates protection against rotator cuff tears.

#### Keywords

rotator cuff tears; Amazonian population; SAP30BP; rs820218; single-nucleotide polymorphism; genetic susceptibility

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#### Biography

Graduação Medicina UFPA (1983), Mestrado e Doutorado Ortopedia e Traumatologia pela UFRJ (1989 e 1994). Pós-doutorado UFPA (2022). Fellowship Cirurgia da Mão Universidade de Louisville, EUA, 1992. Professor adjunto 4 UEPA. Presidente 2025 Sociedade Brasileira de Cirurgia da Mão. É Membro Titular SBCM de SBOT, Membro Internacional ASSH e AANA. Acadêmico Academia de Medicina do Pará. Coordenador Residência Médica de Cirurgia da Mão UEPA-Porto Dias. Professor do Mestrado Profissional Cirurgia Experimental - UEPA. Atuação: Cirurgia da Mão e Ombro, Microcirurgia. Pesquisador área de Microcirurgia Vascular e de Nervo Periférico. Coordenador do Comitê de Ética em Pesquisa do Hospital Porto Dias.

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Dario Kalacun, Drago Brilej, Radko Komadina

Traumatology Department General and Teaching Hospital Celje, Slovenia

## Treatment of Osteoporotic Vertebral Fractures: Diagnostic and Therapeutic Considerations

#### **Background**

Osteoporotic vertebral fractures (OVFs) are among the most frequent and serious complications of osteoporosis, often occurring without a clearly defined traumatic event. Timely diagnosis and appropriate management are essential to prevent chronic pain, spinal deformity, and loss of function.

#### Methods

Initial diagnosis is based on clinical examination and spinal radiographs in two projections. In cases of inconclusive radiographs or for surgical planning, computed tomography (CT) provides greater detail of fracture morphology. Magnetic resonance imaging (MRI) is indicated when neurological deficits are present or to assess fracture age and exclude other pathologies (e.g., metastases, infection). If the aetiology remains uncertain, additional evaluation is necessary to confirm primary osteoporosis.

#### Results

For classification and treatment decision-making, the scoring system of the German Society for Orthopaedics and Trauma (DGOU) offers a structured approach to evaluate fracture stability and guide therapeutic strategy. Most OVFs are treated conservatively with analgesia, activity modification, orthotic support, and physical therapy. Regular clinical and radiological follow-up is required. Indications for minimally invasive cement augmentation techniques (vertebroplasty or balloon kyphoplasty) include severe acute pain unresponsive to conservative therapy, pain persisting for more than 6–12 weeks, or progressive kyphotic deformity. In cases involving significant kyphosis, neurological compromise, or spinal canal stenosis, surgical stabilization is indicated. Due to poor bone quality, screw fixation often requires cement augmentation and/or multilevel constructs to ensure adequate stability.

#### Conclusion

Effective management of OVFs relies on accurate imaging, appropriate use of classification systems (DGOU), and a stepwise therapeutic approach. Combining conservative, interventional, and surgical options tailored to the clinical and radiological presentation leads to improved patient outcomes.

#### **Keywords**

writing, template, sixth, edition, self-discipline, good

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#### Biography

Ass. Dario Kalacun, dr. med.

General and Skeletal Trauma Surgeon

Fields of Interest: Spinal, pelvic, and hip trauma, with a particular focus on reconstructive hip and pelvic surgery and arthroplasty.

ATLS-certified instructor with a strong clinical and academic background in trauma surgery. My primary research and clinical interests lie in complex reconstructive procedures of the hip and pelvis. Currently pursuing a PhD, I am actively involved in several research studies, serving as Principal Investigator on one of them.

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**Dr. Siddharth Gunay[MBBS, MS Orthopaedics, MRCS(Edinburgh)]1,** Dr. Tanmay Avhad [MBBS,MS Orthopaedics, MRCS(Edinburgh)]2

1Clinical Fellow in Arthroplasty & Sports Medicine Mumbai,Maharashtra,India 2Clinical Fellow in Endoscopic Spine Surgery, Indore,Madhya Pradesh,India

Comparison of Clinical and Functional Outcomes in Patients Operated with Standard Offset Stem versus High Offset Stem in Total Hip Replacement: A Retrospective Study

#### Background

Restoration of femoral offset in total hip arthroplasty (THA) is essential for optimal hip biomechanics and improved functional outcomes. This study aimed to compare the clinical and functional results of patients undergoing total hip replacement using standard offset versus high offset femoral stems.

#### Methods

A retrospective comparative study was conducted on 40 patients treated for avascular necrosis of the hip with THA from February 2023 to February 2024. Patients were divided into two equal groups based on implant type: standard offset and high offset femoral stems. Clinical improvement and functional outcomes were assessed using the Harris Hip Score at 6, 12, and 18 weeks postoperatively.

#### Results

Group A (high offset) demonstrated significantly better outcomes, with 70% achieving excellent Harris Hip Scores (>90) compared to 25% in Group B (standard offset). Additionally, Group A showed fewer cases in the poor and fair outcome ranges. The results support the hypothesis that increasing femoral offset improves the abductor lever arm and reduces joint reaction forces, leading to enhanced function and patient satisfaction.

#### Conclusion

High offset femoral stems provide superior functional results in THA and should be considered when tailoring implant choice to patient-specific anatomical requirements.

#### Keywords

High offset stem, Total hip replacement, Harris Hip Score, Femoral offset, Arthroplasty

#### **Biography**

Dr. Siddharth Gunay is an MRCS-qualified orthopaedic surgeon with over five years of clinical experience in trauma, arthroplasty, and sports orthopaedics. He completed his MS Orthopaedics at TNMC & BYL Nair Hospital, Mumbai, and has pursued focused fellowships in joint replacement and sports medicine. He has nine peer-reviewed publications and multiple presentations at national-level conferences. Dr. Gunay is currently preparing for advanced NHS registrar-level roles in the UK and has a strong interest in hip, knee, and shoulder reconstruction.

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**Yoshiaki Yamanaka**<sup>1</sup>, Yoshitaka Tsujimura<sup>1</sup>, Yosuke Mano<sup>1</sup>, Yukichi Zenke<sup>1</sup>, Akinori Sakai<sup>1</sup>

1, Department of Orthopaedic Surgery, School of Medicine, University of Occupational and Environmental Health, Fukuoka, Japan

### Pathological Classification of Idiopathic Carpal Tunnel Syndrome Based on Transthyretin Amyloid Deposition in the Synovium

#### Introduction

This study aimed to clarify the differences in the pathogenesis of CTS among middle-aged women, elderly women, and elderly men who are at the peak of CTS incidence, with a focus on the presence of transthyretin amyloid deposition.

#### Methods

Intraoperative intracarpal tunnel synovium was obtained from patients who underwent surgery for idiopathic CTS, and the presence of TTR deposition in the synovium was evaluated by immunohistochemical staining. Fibroblasts were extracted from the remaining intracarpal synovium and divided into three groups: TTR-negative middle-aged women, TTR-positive elderly women, and TTR-positive elderly men, with 10 subjects in each group. The expression of fibrosis-related genes such as  $Coll\alpha1$ ,  $Coll\alpha2$ ,  $Col3\alpha1$ ,  $TGF-\beta1$ , and  $\alpha SMA$  in fibroblasts collected from the intracarpal tunnel synovium was compared among the three groups using real-time PCR. In addition, BCTQ scores were compared preoperatively and 3 months postoperatively for clinical evaluation.

#### Results

Colla1, Colla2, Col3a1 and TGF- $\beta$ 1 were significantly upregulated in the TTR-positive elderly women compared to those in the TTR-negative middle-aged women and TTR-positive elderly men. In the TTR-negative middle-aged women, the BCTQ-SS significantly improved at 3 months postoperatively compared to that preoperatively.

#### Conclusion

This study identifies synovial fibrosis as a key factor in CTS among TTR-positive elderly females, exhibiting no enhancement in BCTQ scores post-operatively, suggesting TTR-associated neuropathy. Conversely, TTR-negative middle-aged females, demonstrating absence of fibrosis yet presenting improved BCTQ scores post-surgery, imply that elements such as synovial edema could contribute to compression.

#### Keywords

Idiopathic Carpal Tunnel Syndrome, Transthyretin Amyloid, Pathological Classification

### November 13-14, 2025 | Lisbon, Portugal

#### **Biography**

I am an orthopedic surgeon specializing in hand surgery and upper-limb disorders at the University of Occupational and Environmental Health, Japan. My clinical and research interests focus on musculoskeletal fibrosis, including capsular fibrosis in joint contracture, tenosynovial fibrosis in carpal tunnel syndrome, and palmar aponeurosis fibrosis in Dupuytren disease. I have published extensively in these fields and received several academic awards. I am also actively engaged in international collaborations and conference presentations, aiming to advance translational research and improve the understanding and treatment of upper-limb pathologies.

### November 13-14, 2025 | Lisbon, Portugal



**Dr. Siddharth Gunay[MBBS, MS Orthopaedics, MRCS(Edinburgh)]1,** Dr. Tanmay Avhad [MBBS,MS Orthopaedics, MRCS(Edinburgh)]2

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## Tuberculous Osteomyelitis of the Coracoid Process Presenting as Shoulder Pain: A Case Report

#### Background

Tuberculosis (TB) of the shoulder girdle is rare, with the coracoid process being an extremely uncommon site. Healthcare workers in endemic countries like India are at a higher risk of TB, even without identifiable risk factors or systemic symptoms.

#### **Case Report**

We present a rare case of a 26-year-old immunocompetent male doctor with dull, non-traumatic right shoulder pain of one month's duration. Radiographs were normal, but MRI revealed osteomyelitic changes in the coracoid process. Histopathology confirmed tuberculosis, and GeneXpert showed rifampicin sensitivity. The patient was treated successfully with 18 months of anti-tuberculous therapy (ATT), showing complete resolution of symptoms and radiological healing by final follow-up.

#### Conclusion

This case underscores the need for a high index of suspicion for TB, especially in healthcare workers, even when presenting symptoms are mild and imaging is inconclusive. Early diagnosis and prompt ATT can lead to excellent functional outcomes without the need for surgical intervention.

#### **Learning Point**

Tuberculous osteomyelitis of flat bones should be considered in the differential diagnosis of unexplained shoulder pain in endemic regions, particularly in healthcare professionals.

#### Keywords

Coracoid, Tuberculosis, Osteomyelitis, Anti-tubercular therapy, Shoulder pain, Healthcare workers

#### **Biography**

Dr. Siddharth Gunay is an MRCS-qualified orthopaedic surgeon with over five years of clinical experience in trauma, arthroplasty, and sports orthopaedics. He completed his MS Orthopaedics at TNMC & BYL Nair Hospital, Mumbai, and has pursued focused fellowships in joint replacement and sports medicine. He has nine peer-reviewed publications and multiple presentations at national-level conferences. Dr. Gunay is currently preparing for advanced NHS registrar-level roles in the UK and has a strong interest in hip, knee, and shoulder reconstruction.

### November 13-14, 2025 | Lisbon, Portugal



**Dr Lari Sapoznikov**Private Clinic in Tel Aviv Israel, Israel

## Progress in Dentin-Derived Bone Graft Materials: A New Xenogeneic Dentin-Derived Material with Retained Organic Component Allows for Broader and Easier Application

The optimal repair of rigid mineralized tissues, such as bone, in cases of fracture, surgical resection, or prosthetic placement, is a complex process often necessitating the use of bone graft materials. Autogenous bone from the patient is generally the gold standard in terms of outcomes but also has disadvantages, which have resulted in extensive research in the field of tissue engineering to develop better and more convenient alternatives. In the dental field, several initiatives have demonstrated that the dentin material derived from extracted teeth produces excellent results in terms of repairing bone defects and supporting dental implants. Dentin is acellular and thus, in contrast to autogenous bone, cannot provide osteoblasts or other cellular elements to the grafted region, but it does contain growth and differentiation factors, and has other properties that make it an impressive material for bone repair. In this review, the beneficial properties of dentin and the ways it interacts with the host bone are described in the context of bone graft materials. Autogenous tooth material has limitations, particularly in terms of the need for tooth extraction and the limited amount available, which currently restrict its use to particular dental procedures. The development of a xenograft dentin-derived material, which retains the properties of autogenous dentin, is described. Such a material could potentially enable the use of dentin-derived material more widely, particularly in orthopedic indications where its properties may be advantageous.

#### **Biography**

Dr Lari Sapoznikov has been running a private clinic in Tel Aviv Israel with emphasis on implantology and prosthodontics since 1992. He is a Member of IAOI (Israeli association of oral implantology), GAOI (German association of oral implantology), Fellow of ICOI (International Congress of oral implantology), MFDI (Member of the faculty of dentistry of the Royal College of Surgeons in Ireland, England and Scotland) and a Specialist in Basal Implantology at the University of Nice, France. He is the inventor of the "Smart Dentin Grinder" which allows chairside processing of the patient's own teeth to provide autologous dentin particles for bone grafting. He has established the company Ivory Graft Ltd. to extend the availability of dentinderived material for clinical use.

### November 13-14, 2025 | Lisbon, Portugal



Dr. S Talha<sup>1</sup> MBCHB, Dr. A Patel<sup>2</sup>, Mr J Amin<sup>2</sup>

Supervising consultant Mr D Ford and Professor Cool Royal Shrewsbury Hospital

### Standardizing Clerking Practice: An Orthopaedic Audit of Hip Fracture Proforma Compliance

#### **Background**

With an aging population increasing demand on healthcare, standardization is crucial to ensure equitable and safe care. Clerking proformas in hip fracture management facilitate comprehensive assessment, reducing clinical errors, and optimizing outcomes (1). However, poor compliance undermines these benefits and risks patient safety. (2) This closed-loop audit evaluated adherence to a standardized hip fracture clerking proforma against national guidelines.

#### Methods

We reviewed forty consecutive hip fracture clerking proformas over three months, assessing completion of twenty-two mandatory sections. Incomplete or incorrectly completed sections were marked as non-compliant. Following identified deficiencies, we delivered a dedicated teaching session during junior doctor induction and displayed educational posters across the department.

A month following the intervention, we re-audited the data. Forty further proformas over another three-month period using the same criteria.

#### Results

Initial analysis revealed documentation gaps: fracture lateralization recorded in only 82.5% and orthogeriatric reviews in only 2.5% of cases. Post-intervention there was a mean increase in completion rate of 17.5% (range 7.5–60%). On analysing the data, we used a Wilcoxon signed rank test to assess the significance of the non-parametric data. Which demonstrated a p<0.05 meaning post-intervention scores were significantly higher than pre-training, demonstrating a meaningful improvement in completion.

#### **Conclusions**

Clerking proformas are vital for standardized hip fracture care but depend on correct use. Targeted education at induction significantly enhanced compliance across multiple domains. Embedding proforma training in induction programmes is a cost-effective strategy to sustain high-quality care and should be adopted as best practice in orthopaedic departments.

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### November 13-14, 2025 | Lisbon, Portugal

#### **Biography**

I am a resident doctor at the Royal Shrewsbury and Robert Jones and Agnes Hunt Hospitals. During my orthopaedics rotation, I collaborated on research under Mr Ford and Professor Cool, evaluating hip fracture pathways. As Lead Medical Student Educator, I designed interactive musculoskeletal modules to boost learner engagement and clinical reasoning. I'm now preparing to publish data on specialty-specific training programs in orthopaedic centres. By combining frontline clinical practice, rigorous research mentorship, and innovative curriculum development, I aim to share strategies that enhance both patient outcomes and surgical education.

### November 13-14, 2025 | Lisbon, Portugal



**Adriana M. Mercado Rodríguez, MD,** Miguel Agrait González, MD

Ponce Health Sciences University / Centro Médico Episcopal San Lucas Ponce, Puerto Rico

## A Different Type of Tennis Elbow: Spontaneous Septic Arthritis of the Elbow in a Previously Heathy 40-Year-Old Male

Case of a 40-year-old male patient with no past medical history presenting to the emergency department for evaluation of left elbow pain for about 1 week. He could not recall an inciting event or injury but attributed his pain to increased participation in tennis activities during the previous months. He had been evaluated 3 days prior at another facility where x-rays and lab work were performed which he stated were within normal limits. He was discharged with a working diagnosis of tennis elbow and was instructed to take NSAIDs. However, his pain worsened which prompted this visit to the ED. He described his pain worsened with elbow extension and carrying objects. Upon physical examination, the left elbow was held in flexion and had marked swelling as compared to the other side. He also had warmth and tenderness to palpation diffusely over the elbow. Range of motion was severely limited and was painful in all planes. Bedside ultrasound showed a large intraarticular effusion and lab work was relevant for mild leukocytosis. The elbow joint was aspirated and 10mL of grossly purulent material was obtained. He later underwent surgical washout of the elbow with synovectomy followed by a prolonged course of antibiotics. He went on to make a complete recovery and 6 months after the event, he was able to participate in all tennis activities.

#### Keywords

septic, arthritis, elbow, pain, joint, effusion

#### Biography

Graduated from the University of Puerto Rico School of Medicine, in 2020. She completed her Emergency Medicine specialty at St. Luke's Medical Center in Ponce, PR, from which she graduated in 2024. She was then accepted into a Sports Medicine program at West Virginia University, graduating in 2025. She returned to Puerto Rico with the intention of developing a combined Emergency and Sports Medicine practice, and to expand access to patients in PR to the services of a physician specialized in this field. She currently works as a faculty member in the residency program from which she graduated.

### November 13-14, 2025 | Lisbon, Portugal



Fagner Luiz Pacheco Salles<sup>1</sup>, Augusto Gil Pascoal<sup>1,2</sup>

<sup>1</sup>University of Lisbon, Faculty of Human Kinetics, LBMF, CIPER - Neuromechanics, Lisbon, Portugal <sup>2</sup>Alcoitão School of Health Sciences, Alcoitão, Portugal

## Effect of Elastic Resistance on Scapular Kinematics During Overhead Squats: Implications for Shoulder Stability and Rehabilitation

This study investigated the effects of elastic resistance on scapular kinematics during overhead squat movements in 18 asymptomatic adults. Scapular rotations (internal-external rotation, upward-downward, and anterior-posterior tilt), were analyzed using 3D motion analysis under three conditions: no resistance and two levels of elastic resistance. Internal-external rotation showed great differences in resistancemoment at 30°, with R02 vs. R00 differing by 4.2°. Significant resistance-phase-moment interactions were observed. During the load phase at 30°, R01 vs. R00 differed by 8.4°, while R02 vs. R00 differed by 6.7°. For upward-downward rotation, resistance-phase-moment interactions showed differences during the load phase at 60°, revealing a difference of 1.1° between R00 and R01 during the load phase. The anterior-/posterior tilt showed a significant mean effect for phase, with a 0.5° difference during the load phase, and for resistance-moment at 60°, R00 vs. R01 differed by 1.3°. Furthermore, resistance-phase-moment interaction indicated differences during the load phase at 30°, indicating that R01 vs. R00 differed by 1.8, while R01 vs. R02 differed by 2.4°. The results demonstrate that elastic resistance can significantly influence scapular mechanics, providing valuable insights for rehabilitation programs to improve scapular stability. Incorporating elastic resistance into the kinetic chain may help address dysfunctional scapular mechanics, offering innovative strategies for injury prevention and shoulder function optimization in both clinical and athletic contexts.

#### Keywords

shoulder, kinematics, overhead squat, elastic resistance, kinetic chain

#### **Biography**

He holds a degree in Physical Therapy, a master's degree in Administration, and is currently completing his Ph.D. in Rehabilitation at Faculty of Human Kinetics. As a physical therapist, he specializes in the treatment of musculoskeletal and sports-related conditions. His doctoral research focuses on the influence of the kinetic chain on shoulder function using elastic resistance and progressive loading. He also has extensive experience in higher education, having taught Physical Therapy courses in Brazil for over 10 years.

### November 13-14, 2025 | Lisbon, Portugal



**Wei Lu**Shenzhen Hospital of Southern Medical University. China

#### LUtarjet - Limit Unique Coracoid Osteotomy Suture Button Latarjet

#### Background

The inevitable destruction of the coracoacromial arch in the traditional Latarjet procedure may lead to superior or anterior translation of the humeral head. This study aims to introduce a modified Latarjet technique that preserves the coracoacromial arch and to report its mid- to long-term clinical outcomes.

#### Methods

We proposed a suture button fixation Latarjet technique that preserves the coracoacromial ligament (CAL) and pectoralis minor (PM), termed the "LUtarjet" procedure. Preoperative measurements of the coracoid process and glenoid morphology were used to design an individualized osteotomy plan. Intraoperatively, only three arthroscopic portals were required, and a limit unique coracoid osteotomy was performed to preserve the coracoacromial arch. The subscapularis was split using a mini-window technique from posterior to anterior, with a split length of only 8–10 mm.

#### Results

A total of 27 patients (mean age,  $25.6 \pm 5.4$  years) were included. The average surgical duration was  $55.6 \pm 6.3$  minutes, and the mean follow-up period was  $98.1 \pm 1.5$  months. Functional scores significantly improved at the final follow-up. Radiological evaluation demonstrated ideal graft healing and positioning, with very few postoperative complications.

#### Conclusions

The proposed "LUtarjet" technique is a simple, safe, and effective procedure that not only simplifies the traditional Latarjet surgery but also achieves excellent graft healing, remodeling, and satisfactory clinical outcomes. Moreover, it expands the indications for the Latarjet procedure.

#### Keywords

Latarjet; Shulder dislocation; Lutarjet; Suture button; coracoacromial arch preservation

#### Biography

Dr. Wei Lu is the Director of the Sports Medicine Department at Shenzhen Hospital of Southern Medical University, China. He served as an ISAKOS Committee Member for Upper Extremity and Knee Rehabilitation from 2009 to 2019 and is the Chairman of the Shoulder Section of the Chinese Sports Medicine Association. Dr. Lu is widely recognized for his expertise and leadership in sports medicine.

### November 13-14, 2025 | Lisbon, Portugal



Haseeb Mehmood Qadri, **Arham Amir Khawaja**, Raahim Bashir, Asif Bashir

Resident General Surgery and Surgical Oncology, Shaikh Zayed Medical Complex, Lahore, Punjab, Pakistan

## Primary Aneurysmal Bone Cyst of Sacrum: A Case Report of a 12 years old boy from Pakistan

Aneurysmal bone cysts are locally invasive, benign lesions usually found in the spine or metaphysis of long bones. They can be primary (idiopathic) or secondary to other bone pathologies. Primary aneurysmal bone cyst usually occurs in the first two decades of life.

We report a 12-year-old male, a known case of Type-1 diabetes mellitus, with lower back pain radiating to the right lower limb for the past two months following a fall. There were no neurological deficits, although straight leg raises and Faber's tests were positive. Neuroimaging suggested an enhancing 7 x 8 mm lesion involving the lamina of the first sacral vertebra with protrusion into the spinal canal. Bone scan ruled out metastatic pathology. Excision of the lesion with laminectomy and foraminotomy was done. Histopathology was suggestive of an aneurysmal bone cyst. The patient is living a healthy life. Upfront surgical excision without preoperative embolisation and expensive medical therapies can be an option in resource-limited settings.

#### **Keywords**

Aneurysmal bone cyst, Children, Embolisation, Giant cell tumour

#### **Biography**

I am Dr. Arham Amir Khawaja, a Resident in General Surgery with a focus on Surgical Oncology at Shaikh Zayed Medical Complex, Lahore, Pakistan. My interests include oncologic surgery, minimally invasive techniques, and improving postoperative outcomes through evidence-based practices. I have been actively involved in clinical research, contributing to studies on cancer management and multidisciplinary treatment strategies. I am passionate about academic growth and regularly participate in workshops, conferences, and collaborative research initiatives. My goal is to advance surgical innovation and enhance patient care by integrating cutting-edge techniques and best practices in the field of surgical oncology.

### November 13-14, 2025 | Lisbon, Portugal



Mustafa Yassin, Dror Robinson , Mohammad Khatib, Mohammad Eissa and **Hamza Murad** 

University of Haifa and affiliated Medical Centers, Israel

## Potential Use of a New Energy Vision (NEV) Camera for Diagnostic Support of Carpal Tunnel Syndrome

Carpal Tunnel Syndrome (CTS) is a prevalent neuropathy requiring accurate, non-invasive diagnostics to minimize patient burden. This study evaluates the New Energy Vision (NEV) camera, an RGB-based multispectral imaging tool, to detect CTS through skin texture and color analysis, developing a machine learning algorithm to distinguish CTS-affected hands from controls.

#### Methods

A two-part observational study included 103 participants (50 controls, 53 CTS patients) in Part 1, using NEV camera images to train a Support Vector Machine (SVM) classifier. Part 2 compared median nerve-damaged (MED) and ulnar nerve-normal (ULN) palm areas in 32 CTS patients. Validations included nerve conduction tests (NCT), Semmes-Weinstein monofilament testing (SWMT), and Boston Carpal Tunnel Questionnaire (BCTQ).

#### Results

The SVM classifier achieved 93.33% accuracy (confusion matrix: [[14, 1], [1, 14]]), with 81.79% cross-validation accuracy. Part 2 identified significant differences (p < 0.05) in color proportions (e.g., red\_proportion) and Haralick texture features between MED and ULN areas, corroborated by BCTQ and SWMT.

#### Conclusions

The NEV camera, leveraging multispectral imaging, offers a promising non-invasive CTS diagnostic tool using detection of nerve-related skin changes. Further validation is needed for clinical adoption.

#### Keywords

Carpal Tunnel Syndrome, multispectral imaging, NEV camera, machine learning, non-invasive diagnosis, Haralick features

#### **Biography**

Dr. Hamza Murad is an orthopedic surgery resident and doctoral researcher at the University of Haifa, specializing in artificial intelligence and machine learning. His clinical focus is on upper limb, hand, and elbow surgery, while his research explores the application of AI and computer vision in musculoskeletal diagnostics and surgical planning. By bridging clinical practice with computational innovation, Dr. Murad aims to develop intelligent imaging and decision-support tools that enhance precision and patient outcomes in orthopedic care.

### November 13-14, 2025 | Lisbon, Portugal



Beraat Alptuğ1, Emine Handan Tüzün2, Levent Eker3

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## Effects of perceptive rehabilitation and mobilization methods on symptoms and disability in patients with fibromyalgia: A Randomized Controlled Trial

Our single-blind randomized controlled study aimed to examine the effects of perceptual rehabilitation (AR) and mobilization (MOB) methods on symptoms and disability in patients with Fibromyalgia syndrome (FMS). 90 participants diagnosed with FMS were divided into AR, MOB, and control. The AR and MOB groups received 16 treatment sessions. Participants were assessed before (T0), after the treatment (T1), and in the third-month (T2). Assessments included socio-demographic and clinical features, cervical position sense, pain threshold, and tolerance measurements, The Short-Form McGill Pain Questionnaire, Beck Depression Inventory, Fatigue Severity Scale (Y\$S), Pittsburgh Sleep Quality Index (PUKI), and Revised Fibromyalgia Impact Questionnaire were used.

The groups had similar socio-demographic and clinical characteristics (p>0,05). There were no statistical differences between the groups in T0 for all assessments (p>0,05). Significant differences emerged at T1 and T2 in mean pain threshold and tolerance, pain characteristics, depression, and disability levels (p>0.05). The significant differences observed in the total scores of Y\$S and PUKI at T1 (p<0.05) did not persist at T2 (p>0.05). The groups were statistically similar in cervical position sense at T1 and T2 and treatment satisfaction at T1 (p>0.05). MOB is clinically more effective in increasing pressure pain threshold and tolerance, reducing depression, pain intensity, perceptual pain, fatigue, and disability. Conversely, AR demonstrated greater clinical effects on sleep quality, reducing sensory and total pain.

In conclusion, this study provides evidence that AR and MOB are effective in alleviating symptoms and reducing disability in FMS. The findings suggest that these treatments can be used interchangeably to improve the well-being of FMS patients.

#### **Keywords**

Fibromyalgia Syndrome, Manual Therapies, Pain, Health Status

#### Biography

I am Beraat Alptuğ, a physiotherapist and academic staff member with a strong passion for rehabilitation and movement science. My work combines clinical practice, teaching, and research to contribute to the advancement of physiotherapy. As a researcher, I focus on evidence-based approaches to improve patient outcomes and enhance therapeutic techniques. I am actively involved in academic studies, publishing research, and guiding students in their professional development. My goal is to bridge the gap between theory and practice, ensuring that physiotherapy continues to evolve through scientific innovation and education.

### November 13-14, 2025 | Lisbon, Portugal



Benjamin Smith (Presenting Author), Ahmed Sharwany, Ayodele Odedara, Saarah Talha, Megan Roberts Trauma & Orthopaedics, Royal Shrewsbury Hospital, Shrewsbury, UK

## Raising the Standard: Improving Surgical Risk Documentation in Trauma and Orthopaedics

Informed consent is fundamental to surgical practice, requiring accurate communication of material risks. Inconsistent documentation may undermine patient understanding and medico-legal protection. In 2024, a quality improvement project was undertaken in the Trauma and Orthopaedics department of a UK district general hospital to improve standardisation of risk recording for common trauma and fracture procedures. The project evaluated whether prefilled, procedure-specific consent forms would improve the accuracy of risk documentation. Appropriate risks for each operation were agreed locally with reference to the wider literature. Prefilled forms incorporating these risks were then introduced. A retrospective review of consent forms prior to implementation was compared with a prospective audit following introduction. The proportion of operations with complete and correct risk documentation increased from 19% at baseline to 56% post-intervention. The introduction of prefilled, standardised consent forms led to a marked improvement in the accuracy of recorded surgical risks. Streamlining and standardising the consent process in trauma can enhance documentation quality, support consistent patient information, and is readily transferable to other surgical specialties.

#### Keywords

Consent, Risks, Orthopaedics, Standardisation, Audit, Documentation

#### **Biography**

Mr Benjamin Smith studied medicine at Lancaster Medical School and intercalated in a BSc in Anatomy, Developmental and Human Biology at King's College London, graduating with first-class honours. He completed Foundation and Core Surgical Training at Southampton and Royal Shrewsbury Hospitals. He will begin a Master's in Research at Imperial College London in October, focusing on Clinical Robotics, Image-Guided Intervention, and Artificial Intelligence. His interests include surgical innovation and quality improvement.

### November 13-14, 2025 | Lisbon, Portugal



**Zain Al Abdeen Al Zuadi** Paradise house, UK

## First Case of Calcaneal Brodie's Abscess Caused by Fusobacterium Nucleatum in an Immunocompetent Adult

Subacute calcaneal osteomyelitis is a challenging condition with a high relapse rate. This case report presents the first documented instance of subacute osteomyelitis of the calcaneus caused by Fusobacterium nucleatum, manifesting as post-traumatic heel pain in a 24-year-old male. The patient presented with heel pain following a fall, with no history of penetrating injury or immunosuppression. Imaging (Radiograph/CT/MRI) revealed a growing lytic lesion with surrounding bone marrow edema in the calcaneum. Surgical drainage and debridement were performed, and intraoperative cultures identified Fusobacterium nucleatum. The patient was treated with parenteral tazocin and oral metronidazole, followed by six weeks of oral doxycycline and metronidazole. Inflammatory markers normalized over three weeks, and the patient showed satisfactory recovery with follow-up radiographs and clinical reviews. This case highlights the importance of considering Fusobacterium nucleatum in subacute calcaneal osteomyelitis and demonstrates the effectiveness of combined surgical and antibiotic treatment.

#### **Biography**

Dr. Zain Al Abdeen Al Zuabi is a junior doctor based in the United Kingdom. He is currently working in a Medicine rotation at The Queen Elizabeth Hospital, King's Lynn. He has a strong background in Trauma and Orthopaedics and a keen interest in surgery, audit, and medical education. Dr. Al Zuabi is passionate about improving patient care through evidence-based practice and quality improvement.

### November 13-14, 2025 | Lisbon, Portugal



### Johannes Van Der Merwe

University of Saskatchewan, Canada

Comparision of outcomes between resurfaced and unresurfaced patella in total knee arthroplasty using medial congruent liners: a retrospective study

#### Introduction

Total knee replacements are becoming more prevalent. There is still a lot of controversy regarding patellar resurfacing<sup>1</sup>. Surgeons advocating for resurfacing state reduced risk for anterior knee pain and need for revision surgery.. Our goal was to determine if patients will have similar outcomes if the patella is left unresurfaced or resurfaced with the newer liner design.

#### Patients and methods

A multi-surgeon retrospective chart review was conducted in Saskatoon, to identify all patients who received a total knee arthroplasty utilizing a medial congruent (MC) polyethylene liner between January 1, 2020 to December 31, 2020. All included patients were subsequently sent a survey package via ground mail to complete. Patients in whom no mail package was returned were then contacted via phone.

#### Results

We included 188 patients in the final analysis. There was no statistical difference between the groups in regards to age (p=0.77), sex (p=0.075), BMI (p=0.22), hospital stay (p=0.86), laterality (p=0.51), ASA score (p=0.52), Kellgren Lawrence medial compartment OA score (p=0.33) and Kellgren Lawrence lateral compartment OA score (p=0.49). There was a statistical significant difference in favour of the treatment group (patella resurfacing) with the KOOS JR score (p=0.045). This difference was not observed with the Kujala score (p=0.98) and the Oxford score (0.89).

#### Conclusion

There might be a role to perform a patella resurfacing, even in newer total knee designs. We only observed a statistical difference in the KOOS JR score and therefore further high quality research is warranted to determine if there is a true difference between the control and treatment group.

#### **Biography**

I grew up in Pretoria, South Africa and completed medical school at the University of Pretoria in 2000. I did my Houseman year in Windhoek, Namibia. In 2002 which was followed by a community service year in Potchefstroom, South Africa. My wife (family physician) and I emigrated to Canada in 2003. I spent my first 3 years in Canada working as a family physician in La Ronge. In 2006 I joined the residency program in Orthopaedic Surgery at the University of Saskatchewan, and graduated in 2011. This was followed by 2 fellowships in adult reconstruction surgery; a 6-month fellowship in Saskatchewan and a 12-month fellowship at the University of British Columbia in Vancouver. My family and I moved back to Saskatchewan in 2013 where I started my practise as a hip and knee surgeon

### November 13-14, 2025 | Lisbon, Portugal



Sashank Reddy, MD, PhD (presenting), Charles S Kirby, Nasif Islam, Eric Wier, Martin P Alphonse, Evan Sweren, Gaofeng Wang, Haiyun Liu, Dongwon Kim, Ang Li, Sam S Lee, Andrew M Overmiller, Yingchao Xue, Nathan K Archer, Lloyd S Miller, Jianshi Yu, Weiliang Huang, Jace W Jones, Sooah Kim, Maureen A Kane, Robert H Silverman, Luis A Garza

Johns Hopkins University, Baltimore, Maryland, USA

#### RNase L represses hair follicle regeneration through altered innate immune signaling

Injury responses in mammals typically induce fibrosis and scarring rather than functional regeneration. This limited regenerative capacity in mammals could reflect a loss of proregeneration programs or active suppression by genes functioning akin to tumor suppressors. To uncover programs governing regeneration in mammals, we screened transcripts in human participants following laser rejuvenation treatment and compared them with mice with enhanced wound-induced hair neogenesis (WIHN), a rare example of epimorphic regeneration in mammals. We found that Rnasel-/- mice exhibit an increased regenerative capacity, with elevated WIHN through enhanced IL-36α. Consistent with RNase L's known role in activating caspase-1, we found pharmacologic inhibition of caspases promoted regeneration in an IL-36-dependent manner in multiple epithelial tissues. We identified a negative feedback loop, where RNase L-activated caspase-1 restrains the proregenerative dsRNA-TLR3 signaling cascade through the cleavage of toll-like adaptor protein TRIF. Through integrated single-cell RNA-seq and spatial transcriptomic profiling, we confirmed OAS & IL-36 genes to be highly expressed at the site of wounding and elevated in Rnasel-/- mouse wounds. This work suggests that RNase L functions as a regeneration repressor gene, in a functional trade off that tempers immune hyperactivation during viral infection at the cost of inhibiting regeneration.

#### **Keywords**

regeneration, skin, hair follicles, innate immunity

#### Biography

Sashank Reddy received his MD and PhD from Harvard Medical School and completed plastic surgery residency and craniofacial fellowship at Johns Hopkins University prior to joining the university faculty. He currently serves as Associate Professor in the Department of Plastic and Reconstructive Surgery with secondary appointment in Biomedical Engineering. Dr. Reddy is also the Associate Director of the university's Institute for NanoBioTechnology and Senior Medical Director of Johns Hopkins Technology Ventures. Dr. Reddy's clinical practice spans facial skin cancer reconstruction, headache surgery, and craniofacial trauma. His research interests span regeneration and aging.

### November 13-14, 2025 | Lisbon, Portugal



David M. Selkowitz, PT, PhD, DPT, OCS

MGH Institute of Health Professions, Boston, MA, USA

## Patellofemoral Pain: Hip Muscle Activation and Kinematics with Exercise and External Support

This presentation will focus on selected research questions from my group's line of investigation concerning the effects of exercise and external support on electromyographic activity of hip muscles and hip kinematics in persons with patellofemoral pain (PFP). Excessive hip/femoral internal rotation in weight-bearing is associated with increased lateral patellofemoral joint stress and pain. The tensor fascia lata (TFL) is an abductor but also an internal rotator of the hip. The gluteus medius (GMED) and superior gluteus maximus (SUP\_GMAX) are hip abductors, and the SUP-GMAX is also a hip external rotator. Purposes of our research have included comparing the EMG activity of these hip muscles between persons with and without PFP and the effects of external support on pain and hip rotation in persons with PFP. We have assessed, during selected therapeutic exercises, the EMG of these hip muscles using fine-wire electrodes in persons with and without PFP, and hip rotation using 3-D kinematics in persons with PFP while wearing and not wearing the SERF Strap, a brace designed to limit hip internal rotation. Persons with PFP demonstrated increased TFL activation and decreased activation of these gluteal muscles during therapeutic exercises, except for the clam exercise. The SERF Strap decreased knee pain and hip internal rotation in persons with PFP. These results impact clinical strategies for exercise and bracing of the hip and knee for persons with PFP.

#### Keywords

patellofemoral pain, hip, exercise, electromyography

#### **Biography**

Dr. Selkowitz has been on university faculty for over 30 years, having taught evaluation and management of musculoskeletal dysfunction, electrotherapy, and research. His clinical experience in orthopedic physical therapy spans over 40 years. He has presented at numerous professional conferences, workshops, and continuing education courses, from local to international venues, and published book chapters and articles in peer-reviewed journals on musculoskeletal function and dysfunction and electrotherapy. He served 3 consecutive terms on the executive council of the International Society of Electrophysiology and Kinesiology. Dr. Selkowitz has been honored with the Faculty Publication Award by the California Physical Therapy Association (CPTA) and Best Research Platform Presentation Award at the CPTA annual conference.

### November 13-14, 2025 | Lisbon, Portugal



### Ara Nazarian, PhD

Carl J. Shapiro Department of Orthpaedic Surgery, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, USA

## Tear Area Predicts Natural History of Rotator Cuff Degeneration: A Retrospective Study of Supraspinatus Tear Progression

Rotator cuff (RC) tears are a common cause of shoulder pain and dysfunction, with both partial-thickness (PT) and full-thickness (FT) tears showing potential for progressive enlargement. Despite extensive literature, risk factors for tear progression remain unclear. This study introduces a novel area-based classification system and assesses its predictive power relative to conventional dimensional metrics. This retrospective study analyzed 82 patients with isolated full- and partial-thickness supraspinatus tears who underwent two MRIs at least one year apart and were managed non-operatively. Tear morphology was evaluated in anterior-posterior (AP), medial-lateral (ML), and total tear area dimensions. Tear progression was assessed using both conventional classification and a proposed area-based system, categorizing tears as small (< 100 mm<sup>2</sup>), medium (100 - 300 mm<sup>2</sup>), or large (> 300 mm<sup>2</sup>). Of the 52 PT tears, 59.6% progressed to FT tears over a median of 42 months. Tear area at baseline was significantly greater in tears that progressed  $(76.4 \text{ mm}^2 \text{ vs. } 38.5 \text{ mm}^2, \text{ p} = 0.038)$ . Each 50 mm<sup>2</sup> increase in tear area raised the risk of FT conversion by 15%. Among FT tears (n = 30), 46.7% progressed more than 5 mm over a median of 60 months, but all groups demonstrated significant increases in tear area, despite their initial classification. The proposed area-based system more effectively distinguished tears at higher risk of enlargement. Tear area is a superior metric to individual AP or ML dimensions in predicting RC tear progression. An area-based classification system may offer improved clinical insight into prognosis and surgical decision-making, particularly for small and medium isolated supraspinatus tears.

#### Keywords

rotator cuff tear, tear progression, supraspinatus tendon, partial thickness tear, tear area classification, shoulder MRI

#### **Biography**

Ara Nazarian, PhD, is a biomedical engineer and Associate Professor at Harvard Medical School and a principal investigator at Beth Israel Deaconess Medical Center's Carl J. Shapiro Department of Orthopaedic Surgery. He directs the Musculoskeletal Translational Innovation Initiative, leading cross-disciplinary teams that develop and evaluate technologies for fracture care, bone regeneration, and trauma systems. His work spans preclinical models, clinical trials, and data science to move discoveries from bench to bedside. Dr. Nazarian mentors surgeons, engineers, and trainees, and collaborates with industry and government partners. He is widely published and serves on editorial and review panels in musculoskeletal science worldwide.

### November 13-14, 2025 | Lisbon, Portugal



### Muhammad Tayyab

Bradford Teaching Hospitals NHS Trust, Bradford, UK

## Temporal Trends and Regional Disparities in Knee Osteoarthritis Across the United Kingdom: Insights from the Global Burden of Disease Study 1990-2021

#### **Background and Aim**

Knee osteoarthritis (OA) is a major cause of pain, disability, and reduced quality of life, with its burden rising due to aging, obesity, and lifestyle changes. This study analyzed 1990–2021 trends in prevalence, incidence, YLDs, and DALYs for knee OA across the four UK nations using Global Burden of Disease data.

#### Methods

We extracted age-standardized and absolute estimates of prevalence, incidence, YLDs, and DALYs for knee OA in the UK and its four nations from the GBD 2021 database. Joinpoint regression analysis was applied to quantify annual percent change (APC) and average annual percent change (AAPC) in disease burden over time. Temporal patterns and inter-regional differences were assessed.

#### Results

From 1990 to 2021, the knee osteoarthritis burden increased across all UK nations. England had the highest absolute prevalence, rising from 3.02 million to 4.51 million cases (+49.2%), while Northern Ireland showed the largest relative increase (+76.4%). Females consistently had 30-40% higher rates than males, with 2021 prevalence reaching 5,226.8 per 100,000 in England versus 3,753.2 in males. YLD rates rose by 7.16% in England and 7.94% in Scotland. DALYs increased most in Scottish males (+11.0%), and Northern Ireland recorded the fastest prevalence growth. England's burden peaked around 2015 before stabilizing.

#### Conclusion

The burden of knee OA in the UK has risen markedly over the past three decades, with persistent regional disparities. These findings highlight the need for targeted prevention strategies, early diagnosis, and equitable access to joint-preserving interventions. Public health policies addressing obesity, promoting physical activity, and improving OA management could help mitigate future disease burden.

#### Keywords

Knee osteoarthritis; United Kingdom; Global Burden of Disease; temporal trends; regional disparities

#### **Biography**

Dr Muhammad Tayyab (MBBS, MRCS – UK) is a Senior Clinical Fellow in Trauma and Orthopaedics at Bradford Teaching Hospitals NHS Trust, United Kingdom. He has over four years of clinical experience in Trauma&Orthopaedics.

Dr Tayyab has authored fourteen publications in PubMed-indexed journals and remains actively involved in clinical research and audit aimed at improving patient outcomes. In addition to his clinical work, he is committed to medical education, regularly teaching and mentoring junior doctors and medical students.

### November 13-14, 2025 | Lisbon, Portugal



### Muhammad Tayyab

Bradford Teaching Hospitals NHS Trust, Bradford, UK

## Burden of Knee Osteoarthritis in South Asia, 1990-2021: Findings from the Global Burden of Disease Study

#### **Background and Aim**

Knee osteoarthritis (OA) is a major cause of pain and disability worldwide, but its burden in South Asia is not well understood. This study looked at trends in prevalence, incidence, years lived with disability (YLDs), and disability-adjusted life years (DALYs) due to knee OA in South Asia from 1990 to 2021.

#### Methods

Data on knee OA were obtained from the Global Burden of Disease (GBD) 2021 Results Tool for six South Asian nations. Knee osteoarthritis was defined as symptomatic Kellgren-Lawrence grade 2-4 disease. Using the WHO standard population, we derived age-standardized rates (ASRs) per 100,000 people for prevalence, incidence, YLDs, and DALYs. Joinpoint regression was used to examine temporal trends and produce annual percentage change (APC) with 95% confidence intervals.

#### Results

The number of prevalent knee OA cases increased from 21.0 million (95% UI: 17.9-24.1) in 1990 to 58.8 million (95% UI: 50.3-67.1) in 2021 (180% rise). Regional ASRs rose for prevalence (3,441.8 to 3,818.0 per 100,000; 10.9%), incidence (296.2 to 324.2 per 100,000; 9.5%), and DALYs (108.6 to 120.8 per 100,000; 11.3%). Women consistently showed higher rates than men. Bangladesh, Nepal, and Pakistan exhibited the fastest relative increases. Joinpoint analysis revealed significant APC increases across all time segments, with the steepest growth after 2010.

#### Conclusion

The burden of knee OA in South Asia has increased markedly over the last three decades, emphasising the need for locally tailored prevention, early diagnosis, and improved care to reduce disability.

#### Keywords

Knee osteoarthritis; United Kingdom; Global Burden of Disease; temporal trends; regional disparities

#### **Biography**

Dr Muhammad Tayyab (MBBS, MRCS – UK) is a Senior Clinical Fellow in Trauma and Orthopaedics at Bradford Teaching Hospitals NHS Trust, United Kingdom. He has over four years of clinical experience in Trauma&Orthopaedics.

Dr Tayyab has authored fourteen publications in PubMed-indexed journals and remains actively involved in clinical research and audit aimed at improving patient outcomes. In addition to his clinical work, he is committed to medical education, regularly teaching and mentoring junior doctors and medical students.

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