PROGRAMME

How far do we go?
How can we go further?

EMSOS 2023

35th Annual Meeting European Musculo-Skeletal Oncology Society

23rd EMSOS Nurse and Allied Professions Group Meeting

Double Tree by Hilton Brussels,
10-12 May 2023, Brussels-Belgium
Welcome

Dear participants,

We cordially welcome you in Brussels!

EMSOS 2023 is a joint effort of all Belgian University Hospitals. All professions are also represented in our organising committee, as well as the Belgian patient advocacy group Cum Cura.

We are fully aware that much has changed and continues to change over the past decade, both in society and in our profession: patients’ expectations have changed, their role has shifted from more passive ‘informed consent’ to active ‘true shared decision making’ during their disease course. Patients are evolving towards full partners in both treatment and in research, seeking peer support in patient advocacy groups. Parallel to this evolution, the expectations of our younger generation collaborators have also changed, sometimes leading to mutual incomprehension and sputtering collaboration between age groups and profession groups.

In this EMSOS edition, we anticipate these trends and have explicitly chosen not to make a separate allied professionals day but to stimulate interdisciplinary interaction by introducing special transdisciplinary sessions aimed at all stakeholders, including patient advocacy groups, nurse practitioners, physical therapists, dietitians, social workers, physicians, researchers, industry and regulatory bodies.

These transdisciplinary sessions revolve around a common theme ‘How far do we go?’. As patients and caretakers we are repeatedly confronted with this question, and answering it requires true transdisciplinary discussion. We also pose the question: ‘How can we go further?’ in collaborating with each other in order to find answers to the long-standing questions that remain unresolved due to the rareness of the disease and the notorious tumor diversity between and within individual patients.

We very much look forward to meeting you both as fellow professionals with a shared passion for helping our patients and their loved ones, and especially as friends.

Enjoy the meeting.

On behalf of the organising committee,

Ramses Forsyth and Gwen Sys
EMSOS 2023 Organising Committee

Ramses Forsyth  
Department of Anatomo-pathology & Experimental Pathology, Universitair Ziekenhuis Brussel (UZ Brussel), AI Supported Modelling in Clinical Sciences, Vrije Universiteit Brussel (VUB), Brussels

Gwen Sys  
Cancer Research Institute Ghent (CRIG), Ghent University, Department of Orthopaedics and Traumatology and Cancer Center, Ghent University Hospital, Ghent

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Neuromusculoskeletal Lab (NMSK), IREC, UCLouvain and Department of Orthopaedic and Trauma Surgery, Cliniques Universitaires Saint-Luc, Brussels

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Bilal Kapanji  
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Christine Gennigens  
Department of Medical Oncology, CHU de Liège, Liège

Felix Shumelinsky  
Department of Surgery, Institut Jules Bordet-Université Libre de Bruxelles, Brussels

Friedl Sinnaeve  
Department of Onco-Orthopaedic surgery, University Hospitals Leuven, Leuven

Lina Vissenaeken  
Cum Cur a vzw

Gabrielle Van Ramshorst  
Department of Gastrointestinal Surgery, University Hospital Ghent, Ghent

EMSOS Board

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Ramses Forsyth, Brussels, Belgium

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Daniel Kotrych, Szczecin, Poland

Emanuela Palmerini, Bologna, Italy

Rob Pollock, London, United Kingdom

Beatrice Seddon, London, United Kingdom
**Practical Information**

**Venue: Double Trees by Hilton Brussels**

The venue is a multi-layer building with all meeting rooms close to each other.

**Level 0:**
- Registration & Information desk,
- Slide preview room,
- Sycamore Ball room,
- Willow Room,
- Exhibition area,
- Refreshment and Lunch area

**Level 1:**
- Chestnut Room,
- Poster Sessions,
- Meetings,
- Refreshment and Lunch area

**Lay-out**

**Ground Floor**

[Diagram of the ground floor layout]

**First Floor**

[Diagram of the first floor layout]
House Rules

- The venue is a public non-smoking building. Those who need nicotine from time to time will find ashtrays in front of the main entrance.
- Important! No food and drinks are allowed at the meeting rooms!

Registration and Information Desk

Opening hours:

- Wednesday 10 May: 8.00-18.30hrs
- Thursday 11 May: 8.00-17.30hrs
- Friday 12 May: 8.30-17.45hrs

Meals

Refreshments will be served daily in the exhibition area at ground floor level and the atrium on the first floor. Lunch will be provided in the exhibition area and joining rooms.

Climate and Dress

The Belgian climate is distinctly maritime and usually mild. At this time of the year temperatures will be around 15°C. An umbrella might be useful as there is a precipitation one out of every two days in May. Dress will be business casual throughout the conference.

Name Badge

Your personal badge is your entrance ticket to all sessions. Please, remember to wear your badge at the meeting and social events. If you lose your badge, a new one can be purchased against proof of your original registration, at a cost of 5.00 Euros.

Insurance and Liability

The organising committees and Semico n.v. do not accept liability for personal medical expenses/travel expenses/losses of whatever nature incurred by delegates.
Social Program

Welcome Reception

**Wednesday 10 May**

(17.00 until 18.30hrs)

Location: Double Tree by Hilton Brussels

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EMSOS 2023 Dinner

**Thursday 11 May**

(19.30 until 23.00hrs)

Royal Belgian Library

Address: Mont des Arts 28, Brussels

Dress Code: Smart Casual
Scientific Information

How to find your way through the meeting schedule?

Colours

The colours correspond to the following:

- **Training day**
- **PhD & Young Investigator research day**
- **EMSOS session**
- **Plenary lectures**
- **Poster sessions**
- **EMSOS**
- **Social programme**

Posters

Throughout the whole meeting, posters can be viewed at the e-poster kiosks, which will be located on several places throughout the venue. Each kiosk offers you all the posters. Poster sessions will take place at e-poster kiosk 1 and 2 at the first floor.

Icons and legends

- **KEY** Keynote lecture
- **FP** Flash poster oral presentation
- **MD and allied professionals**
- **Interdisciplinary patient support**
- **Medical Oncology topics**
- **Surgical topics**
- **Diagnostics**
- **Collaboration**
- **Technical innovations**
- **Sciences**
- **Euracan session**
Instructions for keynote speakers and oral / poster oral pitch contributors

Keynote speakers and oral contributors are asked to load/check their presentation at least 4 hours prior to their session commencing to ensure the presentation is checked and tested.

*When you have to present on the first day, please load/check your presentation upon your arrival.*

The slide preview room is located on the ground floor opposite to the Sycamore Ball room and will be open:

- Wednesday 10 May: 8.00-17.30hrs
- Thursday 11 May: 8.00-17.30hrs
- Friday 12 May: 8.30-16.00hrs

Speakers are requested to come to the meeting room at least 10 minutes prior to the start of the session and identify them to the chairs.

Presenters must take place at seats in front of the room for the duration of the session. The chair will call you to the lectern in sequence.

*In the interests of fairness, please ensure that you keep to your allotted time frame. The countdown clock will indicate your presentation time progress (green- continue speaking time, orange - time to close down and red - finish your sentence).*

**Instructions for Poster Presenters**

- Poster presentations will take place at the e-poster kiosk 1 and 2 in Room Chestnut (first floor).
- Presenters of posters are requested to be available at the indicated kiosk and times to present and discuss with the colleagues with particular interest. Presentation time can last 2 minutes.
Programme Overview
# Programme Overview

**DAY 1 10 May**

**TRAINING DAY - Educational Sessions**

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<th>Session</th>
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<td>08:00</td>
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<td>Registration</td>
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<td>09:00</td>
<td>10:30</td>
<td>Sycamore Ball Room</td>
<td>Skill development</td>
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<tr>
<td>10:30</td>
<td>11:00</td>
<td>Willow Room</td>
<td>Basic and translational research</td>
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<td>11:00</td>
<td>12:30</td>
<td>Sycamore Ball Room</td>
<td>Coffee/poster viewing</td>
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<td>12:30</td>
<td>13:30</td>
<td>Willow Room</td>
<td>Diagnostics</td>
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<td>13:30</td>
<td>14:00</td>
<td>Sycamore Ball Room</td>
<td>Lunch/poster viewing</td>
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<td>14:00</td>
<td>15:00</td>
<td>Willow Room</td>
<td>Brussels lecture: G. Sys</td>
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<td>Non-surgical treatment options</td>
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<td>17:00</td>
<td>18:30</td>
<td>Willow Room</td>
<td>Wrap up</td>
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**PHD & YOUNG INVESTIGATOR RESEARCH**

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**DAY 2 11 May**

**EMSOS 1**

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<td>Telediagnostics, referral, AI in diagnostics</td>
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### Legends
- MD and allied professionals
- Surgical topics
- Technical innovations
- Interdisciplinary patient support
- Diagnostics
- Sciences
- Medical Oncology topics
- Collaboration
Programme

Wednesday 10 May 2023
Sycamore Ball Room

09:00 - 10:30 TRAINING DAY: SKILL DEVELOPMENT

**Chairs**: Michele Boffano (Italy) and Annelies Van Beeck (Belgium)

**09:00** Welcome and introduction

**09:05** **KEY** The added value of dedicated multidisciplinary teams in specialized sarcoma centers  
Dimosthenes Andreou, Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria  
09:20 Q&A

**09:25** 134 Vertebral plana: A clinical and imaging overview among possible differential diagnoses  
Andrea Angelini, Department of Orthopedics and Orthopedic oncology, University of Padova, Padova, Italy  
09:32 Q&A

**09:34** 191 The role of arthroscopy in intraarticular tumor treatment: How often do malignancies occur?  
Marisa Valentini, Orthopaedics and Traumatology, Medical University of Graz, Graz, Austria  
09:41 Q&A

**09:43** 124 Epidemiology of musculoskeletal tumors in adult patients at a referral unit  
José Vicente Amaya Valero, Musculoskeletal Oncology Unit, Department of Orthopedic and Trauma Surgery, La Fe University Polyclinical Hospital, Valencia, Spain  
09:50 Q&A

**09:52** 306 Improved accuracy and delay in bone tumor diagnosis within an expert sarcoma network: A nationwide study  
Francois Lataste, Clinique Chirurgicale Orthopédique et Traumatologique, Nantes Université, CHU Nantes, Nantes, France  
09:59 Q&A

**10:01** 158 Clinical outcomes of 468 soft tissue sarcoma patients at Cochin Hospital from 2012 to 2019: A monocentric experience  
Diane Ji Yun Yoon, Université Paris Cité, Inserm U1132 BIOSCAR, Paris, France  
10:08 Q&A

**10:10** **KEY** Incorporation of scientific research in clinical setting  
Lee Jeys, Oncology department, Royal Orthopaedic Hospital Birmingham, Birmingham, UK  
10:25 Q&A

**10:30 - 11:00** Refreshments & Poster viewing
# Willow Room

## 09:00 - 10:30 PhD & YOUNG INVESTIGATOR RESEARCH DAY: BASIC AND TRANSLATION RESEARCH

**Chairs**: Emanuela Palmerini (Italy) and Bilal Kapanji (Belgium)

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<th>Time</th>
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<tr>
<td>09:00</td>
<td>Welcome and introduction</td>
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| 09:02  | **KEY** On a path to sarcoma patient-derived models to guide personalized medicine  
*Olivier De Wever, Laboratory of Experimental Cancer Research, Ghent University, Ghent, Belgium*
09:22 Q&A
| 09:27  | 230 Post-operative minimal residual disease models to study metastatic relapse in soft-tissue sarcoma patient-derived xenografts  
*Suzanne Fischer, Laboratory of Experimental Cancer Research, Department of Human Structure and Repair, Ghent University, Department of Gastro-Intestinal Surgery, Ghent University Hospital, Cancer Research Institute Ghent, Ghent, Belgium*
09:42 Q&A
| 09:45  | 157 Characterization of the inflammatory status of osteosarcoma by in silico RNA-seq analyses  
*Diane Ji Yun Yoon, Université Paris Cité, Inserm U1132 BIOSCAR, Paris, France*
09:52 Q&A
| 09:54  | 187 Establishment of patient-specific complex in-vitro models for sarcomas from surgical specimen  
*Maya Niethard, Department of Orthopedic Oncology, Helios Klinikum Berlin-Buch, Berlin and Department of General Orthopedics, University of Greifswald, Greifswald, Germany*
10:01 Q&A
| 10:03  | 210 Total bone recellularization by perfusion: Preliminary results to a new protocol in tissue engineering  
*Robin Evrard, Institut de Recherche Expérimentale et Clinique (IREC), UCLouvain and Cliniques Universitaires Saint-Luc (CUSL), Brussels, Belgium*
10:10 Q&A
| 10:12  | 312 Enhancing massive bone allografts outcomes: a large animal model study  
*Robin Evrard, Institut de Recherche Expérimentale et Clinique (IREC), UCLouvain and Cliniques Universitaires Saint-Luc (CUSL), Brussels, Belgium*
10:19 Q&A
| 10:21  | 128 IDH1 R132 mutations are related to poor prognosis in patients with chondrosarcoma  
*Giulia Trovarelli, Department of Orthopedics and Orthopedic oncology, University of Padova, Padova, Italy*
10:28 Q&A

**10:30 - 11:00 Refreshments & Poster viewing**
Sycamore Ball Room

II:00 - II:30  TRAINING DAY : DIAGNOSTICS

Chairs : Joanna Szkandera (Austria) and Giuseppe Bianchi (Italy)

11:00  Welcome and introduction

11:02  KEY  Local follow up by ultrasound
Martine de Muynck, Department of Orthopaedics and Traumatology, Ghent University Hospital, Ghent, Belgium
11:17  Q&A

11:20  Risk profile of malignant conversion in pelvic osteochondromas. An analysis of cartilage cap thickness
Lee Jey, Oncology department, Royal Orthopaedic Hospital Birmingham, Birmingham, UK

11:25  Comparison of the diagnostic performances of core-needle biopsy in myxoid versus non-myxoid tumors
Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India

11:30  68Ga-FAPI PET/CT as novel diagnostic tool in sarcoma
Rainer Hamacher, Department of Medical Oncology, West German Cancer Center, University Hospital Essen and German Cancer Consortium (DKTK), Partner site University Hospital Essen, Essen, Germany

11:35  Lipoma arborescens: A review of 406 cases focused on epidemiology, differential diagnosis and treatment
Andrea Angelini, Department of Orthopedics and Orthopedic oncology, University of Padova, Padova, Italy

11:40  Q&A

11:44  A systematic literature review on multicentric giant cell tumour and presentation of 3 cases at long term follow-up
Elisa Pala, Department of Orthopedics and Orthopedic oncology, University of Padova, Padova, Italy

11:49  The prognostic value of the modified Glasgow prognostic score in the management of patients with chondrosarcoma : A multicentre study
Ofir Ben Gal, Glasgow Royal Infirmary, Glasgow, UK

11:54  The prognostic value of the serum level of C-reactive protein for survival of children with Ewing’s sarcoma
Costantino Errani, Clinica Ortopedica e Traumatologica III a prevalente indirizzo Oncologico, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

11:59  Musculoskeletal tuberculosis as differential diagnosis of neoplastic lesions:
A retrospective analysis of bone and joint tuberculosis in Austria
Susanne Scheipl, Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria

12:04  Q&A

12:08  Malignant peripheral nerve sheath tumors: A retrospective analysis of a rare soft tissue
Ridhi Ranchor, Medical Oncology, Centro Hospitalar Universitário do Porto, Porto, Portugal

12:13  The hypercoagulable profile of patients with bone tumors: A pilot observational study using rotational thromboelastometry
Ioannis Trikoupis, First Department of Orthopaedics, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece

12:18  Chronic recurrent multifocal osteomyelitis: A multidisciplinary experience of 22 pediatric cases with a mean follow-up of 27 months
Erhan Okay, Department of Orthopaedics, Istanbul Goztepe Prof.Dr.Suleyman Yalcin City Hospital, Istanbul, Turkey
12:23  308-FP  Primary bone lymphoma in pediatric age  
Gianmarco Tuzzato, Unit of 3rd Orthopaedic and Traumatologic Clinic Prevalently Oncologic, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

12:25  Q&A

12:30 - 13:30  Lunch & Poster Viewing
Willow Room

11:00 - 12:30 PhD & YOUNG INVESTIGATOR RESEARCH DAY: SURGICAL TREATMENT OPTIONS

Chairs: Panayiotis Papagelopoulos (Greece) and Thomas Schubert (Belgium)

11:00 Welcome and introduction

11:02  Ph.D. & Young Investigator Research Day: Surgical Treatment Options

11:02 260 Oncologic outcome after partial or total sacrectomy for primary malignant tumors and local recurrent carcinoma/rectal cancer
Anne Weidlich, University Center for Orthopedics, Trauma Surgery and Plastic Surgery, University Hospital Carl Gustav Carus, Dresden, Germany

11:07 287 Do proximal femur megaprosthesis reoperation risk and functional scores differ between non-oncological and oncological conditions?
Guillaume Tran, Nantes Université, CHU Nantes, Clinique Chirurgicale Orthopédique et Traumatologique, Nantes, France and CRC2NA (Centre de Recherche en Cancérologie et Immunologie Nantes-Angers), INSERM UMR 1307, CNRS UMR 6075-Team 9 CHILD, Nantes Université, Nantes, France

11:12 115 Extreme solutions for the reconstruction of massive bone defects
Claudia Rondinella Orthopedic and Traumatology Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy

11:17 154 Reverse total shoulder arthroplasty demonstrates improved functional outcomes over hemiarthroplasty following proximal humerus replacement: Long-term results of 170 cemented endoprosthetic reconstructions for tumors of the upper extremity
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

11:22 Q&A

11:25 156 The prognostic importance of pathologic fracture in limb salvage surgery for primary bone sarcoma of the extremities
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

11:30 214 Mid to long-term clinical results of the LUMiC® prosthesis for reconstruction after periacetabular tumor resection
Richard Evenhuis, Department of Orthopaedic surgery, Leiden University Medical Center, Leiden, The Netherlands

11:35 272 Spanish multi-centre megaprosthesis study (megaprot). Preliminary results
Israel Pérez-Muñoz, Orthopaedic surgery, Ramón y Cajal University Hospital, Madrid, Spain

11:40 314 Limb survival after tibial massive bone allograft
Robin Evrard, Institut de Recherche Expérimentale et Clinique (IREC), UCLouvain and Cliniques Universitaires Saint-Luc (CUSL), Brussels, Belgium

11:45 Q&A

11:48 193 Alternatives for reconstruction of femoral nerve
Javier Buendia Pérez, Musculoskeletal Oncology Unit and Plastic Surgery Department, Hospital Clinico San Carlos, Madrid, Spain

11:53 018 Outcome of reoperation for local recurrence following preoperative Denosumab administration and curettage for giant cell tumour of bone with difficult joint preservation
Shinji Tsukamoto, Department of Orthopaedic Surgery, Nara Medical University, Nara, Japan

11:58 299 The effect of omentum autograft in segmental bone defects of femur, which recycled with liquid nitrogen in rabbits
Osman Emre Aycan, Musculoskeletal Oncology, Baltalimanı Bone Diseases Training and Research Hospital, Istanbul, Turkey

12:03 122 Preoperative arterial embolization of musculoskeletal tumors: A tertiary center experience
Alice Kedra, APHP - Cochin hospital, Paris, France

12:08 Q&A
12:11  050  Long term survival of massive bone allografts  
Julie Manon, Pôle de Neuro-Musculo-Squelettique (NMSK), IREC, UCLouvain and Centre de Thérapie Cellulaire et Tissulaire Locomoteur (UTTCAL), Cliniques Universitaires Saint-Luc UCL, Brussels, Belgium

12:16  068  Bone marrow concentrate in the treatment of aneurysmal bone cyst: A single-institution experience  
Lorenzo Andreani, Department of Orthopedics and Trauma Surgery, Azienda Ospedaliero Universitaria Pisana, Cisanello, Pisa, Italy

12:21  199  Vascularized fibula with and without extracorporeal radiotherapy for limb salvage surgery in Indian patients  
Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India

12:26  348-FP  Does subchondral bone grafting minimize degenerative changes and fracture risk in Giant Cell Tumor treatment of the extremities?  
Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA

12:28  Q&A

12:30 - 13:30  Lunch & Poster Viewing
Plenary Session - Sycamore Ball Room

13:30 - 14:00 BRUSSELS LECTURE

Chairs: Marco Manfrini (Italy) and Francois Gouin (France)

13:30

**Inspiring times: Playing the infinite game in sarcoma care and research**

Gwen Sys, Cancer Research Institute Ghent (CRIG), Ghent University and Department of Orthopaedics and Traumatology and Cancer Center, Ghent University Hospital, Ghent
**Sycamore Ball Room**

**14:00 - 15:00 TRAINING DAY : INFECTION**

Chairs : Lee Jeys (UK) and Jendrik Hardes (Germany)

**14:00** Welcome and introduction

**14:02** **KEY** Pioneering new implant coatings to prevent surgical infections  
Nicholas Bernthal, Department of Orthopaedic Surgery, University of California, Los Angeles, CA, USA

**14:17** Q&A

**14:20** From in vitro to in vivo: Do surgical irrigants meaningfully reduce bacterial burden?  
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

**14:25** Polymicrobial infection with Candida albicans and Staphylococcus aureus increases bacterial biofilm formation in a murine model of periprosthetic joint infection  
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

**14:30** Polipropylene mesh use in orthopaedic oncology: Is infection a myth?  
Osman Emre Aycan, Musculoskeletal Oncology, Baltalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey

**14:35** Can we identify novel immunotherapies for the non-surgical management of periprosthetic joint infection?  
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

**14:40** Preliminary results from EMSOS study on megaprosthesis PJI treated with a staged approach  
Marta Bortoli, Orthopedic and Traumatology Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy

**14:45** Decreasing bacterial colonization: Non-eluting Bactiguard implant coating decreases burden of implant infection seven days after surgery  
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles (UCLA), Los Angeles, CA, USA

**14:50** Topical application of vancomycin powder to prevent infections after massive bone resection and the implant of megaprostheses in orthopedic oncology  
Andreani Lorenzo, Department of Orthopedics and Trauma Surgery, University of Pisa, Pisa, Italy

**14:55** Q&A

**15:00 - 15:30** Refreshments & Poster viewing
### PhD & YOUNG INVESTIGATOR RESEARCH DAY: DIAGNOSTICS

**Willow Room**

**14:00 - 15:00**

**Chairs**: Will Aston (UK) and Andrea Angelini (Italy)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>14:00</td>
<td>Welcome and introduction</td>
</tr>
<tr>
<td>14:02</td>
<td>Evaluation of the diagnostic accuracy of percutaneous core needle biopsy in bone and soft tissue tumors</td>
</tr>
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<td></td>
<td><em>Tolgahan Cengiz, Department of Orthopedics and Traumatology, Ondokuz Mayis University, Samsun, Turkey</em></td>
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<tr>
<td>14:09</td>
<td>Retrospective view on Campanacci grading of giant cell tumors of the bone</td>
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<td><em>Mylène Duivenvoorden, Department of Orthopaedic surgery, Amsterdam University Medical Centers, Amsterdam, The Netherlands</em></td>
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<tr>
<td>14:16</td>
<td>Reliability and role of mutation-specific H3F3A (Histone 3-3) G34W immuno-histochemistry to differentiate giant cell tumor of bone from its clinico-radiologic and histologic mimics: An institutional study</td>
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<td><em>Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India</em></td>
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<tr>
<td>14:23</td>
<td>Low-grade fibromyxoid sarcoma and subtypes: a literature review of a challenging diagnosis</td>
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<td><em>Elisabeth Kleine, Department of Orthopaedic surgery, Amsterdam University Medical Centers, Amsterdam, The Netherlands</em></td>
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<tr>
<td>14:30</td>
<td>Dedifferentiated liposarcoma of the extremities: Characteristics and outcome</td>
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<td><em>Jay Hoon Park, Department of Orthopedic Surgery, Seoul National University Hospital, Seoul, South Korea</em></td>
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<tr>
<td>14:37</td>
<td>Dual time point [18F]FDG PET/CT can differentiate benign from malignant musculo-skeletal tumors and identifies accurately grade 3 sarcomas</td>
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<td><em>Philippe D’Abadie, Department of nuclear medicine, Cliniques Universitaires Saint Luc, Institut Roi Albert II, Brussels, Belgium</em></td>
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<tr>
<td>14:44</td>
<td>How to manage intraarticular knee masses; Building an algorithm from a retrospective point of view</td>
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<td><em>Sirin Evrim, Marmara University School of Medicine, Department of Orthopaedic Surgery and Traumatology, Istanbul, Turkey</em></td>
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<tr>
<td>14:51</td>
<td>Impacts of preoperative denosumab treatment on bone metabolism in young patients with giant cell tumor of bone</td>
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<td><em>Yoon Joo Cho, St. Vincent’s Hospital, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea</em></td>
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<tr>
<td>14:58</td>
<td>Extraskeletal Ewing sarcoma: Experience in a tertiary cancer care centre of India</td>
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<td><em>Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India</em></td>
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<tr>
<td>15:00</td>
<td>Cemented versus uncemented tumor endoprostheses at the knee: a systematic review and meta-analysis</td>
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<td></td>
<td><em>Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA</em></td>
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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>15:00</td>
<td>Refreshments &amp; Poster viewing</td>
</tr>
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Sycamore Ball Room

15:30 - 16:45 TRAINING DAY: SOFT TISSUE MANAGEMENT

Chairs: Laura Campanacci (Italy) and David Biau (France)

15:30 Welcome and introduction

15:32 KEY What has the plastic to offer to the onco orthoped
Koenraad Van Landuyt, Department of Plastic Surgery, Ghent University Hospital, Ghent, Belgium
15:52 Q&A

15:55 087 A size-based criteria for flap reconstruction following thigh adductor soft tissue sarcoma resection
Jennifer Nevin, Novak, University Musculoskeletal Oncology Unit, Mount Sinai Hospital, University of Toronto, Toronto, Canada

16:00 195 Early outcomes of immediate and delayed reconstruction following sarcoma resection in a single sarcoma referral center: A descriptive study
Martin Lhuaire, Department of Plastic, Reconstructive and aesthetic surgery, Hôpital Européen Georges Pompidou, APHP, Université Paris Cité, Department of Imaging research, Cardiovascular research Center of Paris - Department of Anatomy and Organogenesis of Saints-Pères, Faculté de Médecine Paris-Descartes, Université Paris Cité, Paris, France

16:05 022 Utility of pedicled functional latissimus flaps for reconstruction of the upper extremity following resection of soft-tissue sarcomas
Matthew Houdek, Department of Orthopedic Surgery Mayo Clinic, Rochester, MN, USA

16:10 211 Case series: Option of healing with secondary intention is a valid treatment option - Not all wounds needs to close primarily or reconstructed. Sometimes doing less gives the patients more
Eyrique Goh Boay Heong, Musculoskeletal Oncology unit, Orthopedic Dept. Hospital Kuala Lumpur, Malaysia

16:15 Q&A

16:20 338 Early outcomes of immediate reconstruction following sarcoma resection including major vessels in a single sarcoma referral center: A descriptive study
Martin Lhuaire, Department of Plastic, Reconstructive and aesthetic surgery, Hôpital Européen Georges Pompidou, APHP, Université Paris Cité, Department of Imaging research, Cardiovascular research Center of Paris - Department of Anatomy and Organogenesis of Saints-Pères, Faculté de Médecine Paris-Descartes, Université Paris Cité, Paris, France

16:25 044 Outcomes of abductor repair using mesh augmentation in oncologic proximal femur replacement
Matthew Houdek, Department of Orthopedic Surgery Mayo Clinic, Rochester, MN, USA

16:30 096 Does the use of negative pressure wound therapy in sarcomas affect local recurrence?
José Vicente Amaya Valero, Musculoskeletal Oncology Unit, Department of Orthopedic and Trauma Surgery, La Fe University Polyclinical Hospital, Valencia, Spain

16:35 171 Wound infection after resection of sarcomas at the groin: Does antibiotic prophylaxis reduce the risk of infection?
Alexander Klein, Orthopaedic Oncology, Department of Orthopaedics and Trauma Surgery, Musculoskeletal University Center Munich (MUM), University Hospital, LMU Munich, Germany

16:40 Q&A
**Sycamore Ball Room**

**16:45 - 17:00**  TRAINING DAY -WRAP UP

- **SKILL DEVELOPMENT**: Michele Boffano (Italy) and Annelies Van Beeck (Belgium)
- **DIAGNOSTICS**: Joanna Szkandera (Austria) and Giuseppe Bianchi (Italy)
- **INFECTION**: Lee Jeys (UK) and Jendrik Hardes (Germany)
- **SOFT TISSUE MANAGEMENT**: Laura Campanacci (Italy) and David Biau (France)

**17:00 - 18:30**  Welcome Reception @ Double Tree Hotel
Willow Room

15:30 - 16:45  PhD & YOUNG INVESTIGATOR RESEARCH DAY: NON-SURGICAL TREATMENT OPTIONS

Chairs: Catharina Dhooge (Belgium) and Christine Gennigens (Belgium)

15:30
Welcome and introduction

15:32  KEY
Toxicity of new sarcoma treatments
Jean-Yves Blay, Department Medical Oncology, Centre Léon Bérard, Lyon, France

15:47  117
Wait-and-scan of atypical cartilaginous tumours in the long bones
Claire Scholte, Department of Orthopedics, Leiden University Medical Center, The Netherlands

15:52  147
Surgical outcomes in patients treated with 5-day preoperative radiotherapy for primary soft tissue sarcoma
Nicholas Bernthal, Department of Orthopaedic Surgery, University of California, Los Angeles, CA, USA

15:57  264
Spontaneous tumor lysis syndrome in solid sarcomas. Case report and systematic literature review
Manuel Ricardo Medellin, Orthopaedic Oncology, Sarcoma Clinic, Fundación CTIC Luis Carlos Sarmiento Angulo, Orthopaedic Oncology, Sarcoma Clinic, Fundación CTIC Bogotá, Colombia

16:02  325
Neoadjuvant radiotherapy in extremity Ewing sarcoma may facilitate increased rates of limb salvage
Christopher Anthony, Oncology Department, Royal Orthopaedic Hospital, Birmingham, UK

16:07  202
Neoadjuvant chemoradiation in the management of high-risk adult soft tissue sarcoma: A single-center experience
Inês Pinto, Department of Radiotherapy, Centro Hospitalar e Universitário de Coimbra, Portugal

16:12
Q&A

16:16  179
Percutaneous cryoablation for the treatment of extra-abdominal desmoid tumors
Costantino Errani, Clinica Ortopedica e Traumatologica III a prevalente indirizzo Oncologico, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

16:21  082
Comparing clinical efficacy of bio similar to original molecule in short course use of neoadjuvant denosumab in giant cell tumour of bone
Ajay Puri, Orthopaedic Oncology, Tata Memorial Centre, Mumbai, India

16:26  248
Targeted therapy in sarcoma treatment by gene sequencing - new opportunities and higher precision
Michelle Müller, Trauma-, Hand- and Reconstructive- Surgery, University Hospital Jena, Jena, Germany

16:31  130
Do unresectable giant cell tumours of bone treated with denosumab progress after discontinuation of treatment?
Carolina De la Calva, Musculoskeletal Oncology Unit, Department of Orthopedic and Trauma Surgery, La Fe University Polyclinical Hospital, Valencia, Spain

16:36
Q&A

16:40  057-FP
Safety of trabectedin in soft tissue sarcomas: a single centre study
Ana Vasques, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal

16:42  290-FP
Ewings Sarcoma of the head and neck region: long term outcomes of patients treated with a homogenous treatment protocol
Nehal Khanna, Department of Radiation Oncology, Tata Memorial Hospital, Mumbai, India
Chestnut Room

15:30 - 16:45 PhD & YOUNG INVESTIGATOR RESEARCH DAY: NURSING AND PSYCHOSOCIAL RESEARCH

Chairs: Anthony Griffin (Canada) and Peter Bekkering (The Netherlands)

15:30  Welcome and introduction

15:32  229 Work of a nurse practitioner in the princess maxima center
Working together (multidisciplinary)
Linde Beekman, Princess Maxima Center, solid tumours, Utrecht, The Netherlands
15:46 Q&A

15:50  313 Impact of the COVID-19 pandemic on sarcoma patients: results from the London Sarcoma Service
Matthew Wood, Division of Orthopaedic Oncology & Specialist Hip and Knee Unit (DOOShaK), Royal National Orthopaedic Hospital, Stanmore, UK

15:57  011 Did the COVID-19 pandemic negatively affect outcomes for patients with extremity soft tissue sarcomas?
Anthony Griffin, Musculoskeletal Oncology Unit, Division of Orthopaedic Surgery, Mount Sinai Hospital, Toronto, Canada

15:57  313 Impact of the COVID-19 pandemic on sarcoma patients: results from the London Sarcoma Service
Matthew Wood, Division of Orthopaedic Oncology & Specialist Hip and Knee Unit (DOOShaK), Royal National Orthopaedic Hospital, Stanmore, UK

15:57  011 Did the COVID-19 pandemic negatively affect outcomes for patients with extremity soft tissue sarcomas?
Anthony Griffin, Musculoskeletal Oncology Unit, Division of Orthopaedic Surgery, Mount Sinai Hospital, Toronto, Canada

16:04  072 Detrimental effect of COVID-19 pandemic on patients with adult extremity bone sarcoma. Reference center experience
Bartłomiej Szostakowski, Department of Soft Tissue/Bone Sarcoma and Melanoma, Maria Skłodowska-Curie National Research Institute of Oncology, Warsaw, Poland

16:11  183 Delay in diagnosis and treatment of primary bone tumors during COVID-19 pandemic in Poland
Dawid Ciechanowicz, Department of Orthopaedics, Traumatology and Musculoskeletal Oncology, Pomeranian Medical University, Szczecin, Poland

16:18  Q&A

16:27  254 Primary thoracic wall malignancy in children, outcome after surgical treatment and options for functional evaluation
Peter Bekkering, Máxima sports & movement center, Princess Máxima Center for paediatric oncology, Utrecht, The Netherlands

16:34  255 Complex clinical evaluation of the patient treated with oncologic shoulder replacement - the follow up of 31 cases
Wojciech Zacha, Department of Orthopedics, Traumatology and Orthopedic Oncology, Pomeranian Medical University of Szczecin, Szczecin, Poland

16:41  Q&A
Willow Room

16:45 - 17:00  PhD & YOUNG INVESTIGATOR RESEARCH DAY - WRAP UP

- **BASIC AND TRANSLATION RESEARCH**: Emanuela Palmerini (Italy) and Bilal Kapanji (Belgium)
- **SURGICAL TREATMENT OPTIONS**: Panayiotis Papagelopoulos (Greece) and Thomas Schubert (Belgium)
- **DIAGNOSTICS**: Will Aston (UK) and Andrea Angelini (Italy)
- **NON-SURGICAL TREATMENT OPTIONS**: Catharina Dhooge (Belgium) and Christine Gennigens (Belgium)
- **NURSING AND PSYCHOSOCIAL RESEARCH**: Anthony Griffin (Canada) and Peter Bekkering (The Netherlands)

17:00 - 18:30  Welcome Reception @ Double Tree Hotel
Programme
Thursday 11 May 2023
08:30  Welcome address EMSOS 2023  
Ramses Forsyth and Gwen Sys

Welcome  
Pietro Ruggieri, president EMSOS

Presentation of EMSOS' official journal  
Clinical Orthopaedics and Related Research® - CORR  
Seth Leopold
Sycamore Ball Room

09:05 - 10:30 BASIC AND TRANSLATION SCIENCE

Chairs: Fabrice Fiorenza (France) and Olivier De Wever (Belgium)

09:05 KEY
Recent advances in the biology of osteosarcoma
Dominique Heymann, Université de Nantes, Institut de Cancérologie de l’Ouest, Saint Herblain, France
09:20 Q&A

09:25 020
Characterizing organelles in myxofibrosarcoma cells using label-free optical diffraction tomography
Eun Seok Choi, Department of Orthopaedic Surgery, Chungnam Nat’l University, Daejeon, Korea

09:30 329
Characterization of miRNA-mRNA network in soft tissue sarcoma
Elisabetta Gambale, Department of Experimental and Clinical Medicine, University of Florence, Florence, Italy

09:35 Q&A

09:37 109
RNF4-RGMb-BMP6 axis required for osteogenic differentiation and cancer cell survival
Rostislav Novak, Department Orthopedics, Rambam Health Campus Center, Haifa, Israel

09:42 234
Clinical significance of DNA methylation status in soft tissue sarcomas
Min Wook Joo, Department of Orthopaedic Surgery, St. Vincent’s Hospital, College of Medicine, The Catholic University of Korea, Korea

09:47 061
Tumor microenvironment reprogramming during immuno-chemotherapy in osteosarcoma
Hongmin Chen, Department of Musculoskeletal Oncology, Sun Yat-Sen University Cancer Center, Guangzhou, China and State Key Laboratory of Oncology in Southern China, Collaborative Innovation Center of Cancer Medicine, Guangzhou, China

09:52 226
Study of the spatial heterogeneity of the osteosarcoma microenvironment in the resistance to treatment by digital pathology
Anne Gomez-Brouchet, Département de Pathology, University Hospital of Toulouse, Toulouse, France

09:57 182
Characterization of the tumor microenvironment in jaw osteo-sarcomas, towards prognostic markers and new therapeutic targets
Anne Gomez-Mascard, Cancer biobank of Toulouse, IUCT Oncopole, Toulouse University Hospital, Toulouse, France

10:02 326
A novel immune cell signature for predicting pleomorphic sarcoma prognosis
Serena Pillozzi, Department of Experimental and Clinical Medicine, University of Florence, Florence, Italy

10:07 Q&A

10:10 111
In search of the ideal implant: Measuring osseointegration of titanium implants with antimicrobial surface treatments
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles, Santa Monica, CA, USA

10:15 110
Does intrawound vancomycin powder alter in vivo osseointegration in a murine model of joint arthroplasty?
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles, Santa Monica, CA, USA

10:20 152
Can the use of bacteriophage derived endolysin reliably prevent S. aureus periprosthetic infection in a murine model?
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles, Santa Monica, CA, USA

10:25 Q&A
10:27  347-FP  Biomechanical analysis comparing different reconstruction methods of large segmental defects at the femur
Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA

10:29  321-FP  Genetic phenotype in osteosarcoma patients
Saidrasul Nasirov, Oncology and medical radiology, Tashkent Medical Academy, Tashkent, Venezuela

10:30 - 11:00  Refreshments
10:35 - 10:55  Poster Session 1 & 2
Willow Room

09:05 - 10:30 PREMS and PROMS

Chairs: Michelle Ghert (Canada) and Felix Shumelinsky (Belgium)

09:05  KEY  The use of PROMS and PREMS in clinical trials and daily practice
Elke Rammant and Evita Kiesel, Department of Human Structure and Repair, Ghent University, Ghent, Belgium
09:30 Q&A

09:35 223  Fear of cancer recurrence among childhood cancer survivors and their parents: A systematic review
Angelina Bruseker, Amsterdam UMC, University of Amsterdam, Orthopaedics and Sports Medicine, Cancer Center Amsterdam, Amsterdam Movement Sciences, Amsterdam, The Netherlands
09:42 146  Patient-reported outcome scores in lower-limb sarcoma patients. Results from the German-wide prospective cohort study (PROSa)
Maria Anna Smolle, Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria
09:49 350  The electronic Toronto extremity salvage Score (eTESS) - an institutional interventional study to improve the patients’ response rate
Gerhard Hobusch, Department of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria
09:56 077  Functional outcomes after reversed shoulder megaprosthesis following resection of malignant bone tumor in the proximal humerus: A systematic review and meta-analysis
Jorinde Denissen, Radboud University Medical Center, Radboud Institute for Health Sciences, Department of Rehabilitation, Nijmegen, The Netherlands
10:03 103  Patient-reported outcomes following treatment with vimseltinib for tenosynovial giant cell tumor in a phase 2 expansion study
Michiel Van de Sande, Leiden University Medical Center, Leiden, The Netherlands
10:10 284  The quality of life of patients with bone tumors of the lower limbs treated with salvage surgery: a long-term follow-up study
Enrico Venturini, Physical medicine and Rehabilitation, Istituto Ortopedico Rizzoli, Bologna, Italy
10:17 256  Functional and survival outcomes of patients following Harrington procedure for acetabular complex metastatic lesions
Vincent Crenn, Clinique Chirurgicale Orthopédique et Traumatologique, Nantes Université, CHU Nantes, Nantes, France
10:24 346-FP  Predictors of functional results in patients undergoing synovial sarcoma surgery
Pau Machado, COT, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain
10:26 071-FP  Functional outcomes and quality of life in patients who underwent limb sparing surgery for soft tissue sarcomas
Roberto Carlos Garcia Maroto, Orthopaedic Surgery and Traumatology, Musculoskeletal Sarcomas Department, Hospital Clinico San Carlos, Madrid, Spain
10:28 238-FP  Functional outcome of Pirogoff amputation. About two cases
Roberto Carlos Garcia Maroto, Orthopaedic Surgery and Traumatology, Musculoskeletal Sarcomas Department, Hospital Clinico San Carlos, Madrid, Spain

10:30 - 11:00 Refreshments
10:35 - 10:55 Poster Session 1 & 2
**Soft Tissue Sarcoma**

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<th>Poster</th>
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<tr>
<td>213</td>
<td>Giant atypical lipomatous tumors of the thigh: A case series</td>
<td>Edoardo Ipponi, Department of Orthopedics and Trauma Surgery, University of Pisa, Pisa, Italy</td>
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<tr>
<td>032</td>
<td>The outcome of extremity soft tissue sarcomas in terms of resection margins: A study from a cancer dedicated center</td>
<td>Muhammad Bilal Shafiq, Department of surgical oncology, Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore, Pakistan</td>
</tr>
<tr>
<td>071</td>
<td>Functional outcomes and quality of life in patients who underwent limb sparing surgery for soft tissue sarcomas</td>
<td>Roberto Carlos García Maroto, Orthopaedic Surgery and Traumatology, Musculoskeletal Sarcomas Department, Hospital Clinico San Carlos, Madrid, Spain</td>
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<tr>
<td>262</td>
<td>Oncologic and functional outcomes after resection of soft tissue sarcomas of the extremities and trunk: retrospective analysis of prognostic factors after neo-/adjuvant radiotherapy</td>
<td>Hagen Fritzschke, University Center for Orthopedics, Trauma Surgery and Plastic Surgery, University Hospital Carl Gustav Carus Dresden, Germany</td>
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<td>166</td>
<td>Impact of the association of amputation and radiotherapy on soft tissue sarcoma prognosis</td>
<td>Diane Ji Yun Yoon, Université Paris Cité, Inserm U1132 BIOSCAR, Paris, France</td>
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<td>066</td>
<td>Trabectedin in second or later lines - experience of a Portuguese Center</td>
<td>Joana Albuquerque, Hospital da Luz Lisboa, Lisbon, Portugal</td>
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<td>047</td>
<td>Trabectedin for the treatment of non-L-sarcomas: A single-center experience</td>
<td>Joana Albuquerque, Hospital da Luz Lisboa, Lisbon, Portugal</td>
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<td>057</td>
<td>Safety of trabectedin in soft tissue sarcomas: a single centre study</td>
<td>Ana Vasques, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal</td>
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**Basic & Translation Research**

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<tr>
<td>052</td>
<td>Impact of topography and added TiN-coating on adult human dermal fibroblast viability and proliferation after seeding on titanium surface in vitro</td>
<td>Marius Wahrenburg, Department of Orthopedic Oncology, Essen University Hospital, Germany</td>
</tr>
<tr>
<td>319</td>
<td>Fibrinolysis shutdown and elevated D-dimer levels have high prognostic capacity for postoperative thromboembolic complications in patients with bone tumors</td>
<td>Ioannis Trikoupis, First Department of Orthopaedics, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece</td>
</tr>
<tr>
<td>347</td>
<td>Biomechanical analysis comparing different reconstruction methods of large segmental defects at the femur</td>
<td>Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA</td>
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</tbody>
</table>
**Diagnostics**

<table>
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<tr>
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<tbody>
<tr>
<td>178</td>
<td>Evaluation of bone and soft tissue tumors of the shoulder girdle</td>
<td>Nevzat Dabak, Department of Orthopedics and Traumatology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey</td>
</tr>
<tr>
<td>308</td>
<td>Primary bone lymphoma in pediatric age</td>
<td>Benedetta Spazzoli, Unit of 3rd Orthopaedic and Traumatologic Clinic Prevalently Oncologic, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy</td>
</tr>
<tr>
<td>310</td>
<td>Non-ossifying fibroma fracture risk: How long and how should we follow?</td>
<td>Osman Emre Aycan, Musculoskeletal Oncology, Baltalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey</td>
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</tbody>
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**Infections - Salvage Surgery**

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<thead>
<tr>
<th>Page</th>
<th>Title</th>
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<tbody>
<tr>
<td>028</td>
<td>Management of perioprosthetic infection in limb salvage surgery, what I have learnt?</td>
<td>Ahmad Shehadeh, Department of Surgery, King Hussein Cancer Center, Amman, Jordan</td>
</tr>
<tr>
<td>285</td>
<td>Rotationplasty as reconstructive or salvage surgery for patients with bone sarcoma: choice or last option?</td>
<td>Inês Balacó, Department of Pediatric Orthopaedics, Hospital Pediétrico , À CHUC, EPE, Coimbra, Portugal</td>
</tr>
<tr>
<td>324</td>
<td>Staged revision of infection with adjustable spacers after megaprosthesis implantation in primary sarcoma patients</td>
<td>Evrim Sirin, Department of Orthopaedic Surgery and Traumatology, Marmara University School of Medicine, Istanbul; Turkey</td>
</tr>
<tr>
<td>349</td>
<td>Total femoral replacement following prior oncologic or arthroplasty reconstruction is associated with increased risk for infection and limb-salvage failure</td>
<td>Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA</td>
</tr>
<tr>
<td>030</td>
<td>Outcomes of limb salvage surgery with mega-prosthesis: Experience from national cancer center</td>
<td>Muhammad Bilal Shafiq, Surgical Oncology Department, Shaukat Khanum Memorial Cancer Hospital &amp; Research Center, Lahore, Pakistan</td>
</tr>
</tbody>
</table>
Plenary Session - Sycamore Ball Room

II:00 - II:25  EMSOS LECTURE

Chairs: Pietro Ruggieri (Italy) and Ramses Forsyth (Belgium)

11:00  Translational sarcoma research: Reflections on collaboration
       Judith Bovée, Department pathology, LUMC, Leiden The Netherlands

Sycamore Ball Room

II:30 - II:50  CAOS AND DIGITAL INNOVATIONS I

Chairs: Philipp Funovics (Austria) and Hazem Wafa (Belgium)

11:30  KEY  DIY 3D in-house design & production; where do we stand?
        Paul Jutte, Department orthopaedics, UMCG, Groningen, The Netherlands

11:45  KEY  Current state on augmented reality in the OR for bone (sarcoma) surgery
        Édouard Auvinet, Engineering school of Brussels, Brussels Belgium

12:00  KEY  Scientific-wise approach of Custom-Made - what can industry bring to surgeons?
        Laurent Paul, 3D-Side, Mont Saint Guibert, Belgium

12:15  KEY  Medical technologies for rare diseases: Lessons learned from orphan medicinal products
        Marc Dooms, Clinical Pharmacology, UZLeuven, Leuven, Belgium

12:30  KEY  Guided introduction of high-risk medical devices
        Mattias Neyt, Health economy, KCE- Belgian Health Care Knowledge Centre, Belgium

12:45  Discussion

12:50 - 13:45  Lunch Symposium implantcast
               Lunch & Poster Viewing
### Willow Room

#### 11:30 - 12:50  TELEDIAGNOSTICS, REFERRAL, AI IN DIAGNOSIS

**Chairs:** Rob Pollock (UK) and Andrea Sambri (Italy)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>11:30</td>
<td><strong>KEY</strong> Central MTD advice or referral to expert centers</td>
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<tr>
<td></td>
<td><em>Jean-Yves Blay, Department Medical Oncology, Centre Léon Bérard, Lyon, France</em></td>
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<td>11:50</td>
<td><strong>KEY</strong> Sarcoma classification: From molecular Omics to AI Omics?</td>
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<td></td>
<td><em>Ramses Forsyth, Department of Pathology and Experimental Pathology, University Hospital Brussels, AI Supported Modelling in Clinical Sciences, Vrije Universiteit Brussel (VUB), Brussels, Belgium</em></td>
</tr>
<tr>
<td>12:15</td>
<td>307 What is the role of chest Imaging in atypical lipomatous tumours?</td>
</tr>
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<td><em>Michele Boffano, Orthopaedic Oncology Unit, Città della Salute e della Scienza, Torino, Italy</em></td>
</tr>
<tr>
<td>12:22</td>
<td>343 How accurately can lipoma and atypical lipomatous tumors be differentiated based on images alone?</td>
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<td><em>Frank Traub, Department of Orthopaedic and Traumatology, University Medical Center Mainz, Mainz, Germany</em></td>
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<tr>
<td>12:29</td>
<td>010 Tumor grade assessment by artificial intelligence based on MRI images in soft tissue sarcoma</td>
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<td><em>Facundo Manuel Segura, Universidad Nacional de Córdoba and Segura, Centro Privado de Ortopedia y Traumatología, Cordoba, Argentina</em></td>
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<tr>
<td>12:36</td>
<td>106 Fake “innocent” small and superficial soft tissue sarcomas</td>
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<td><em>Jorge Gómez-Álvarez, Department of Orthopedic Surgery, Clinica Universidad de Navarra, Pamplona, Spain</em></td>
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<tr>
<td>12:43</td>
<td>101-FP Development and validation of a machine learning model to predict outcomes following radiation in soft tissue sarcoma</td>
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<td></td>
<td><em>Anthony Bozzo, Musculoskeletal Oncology, Memorial Sloan Kettering Cancer Center, NYC, USA</em></td>
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</tbody>
</table>

12:50 - 13:45 **Lunch Symposium implantcast**

**Lunch & Poster Viewing**
Lunch Symposium - Sycamore Ball Room

12:50 - 13:45 LUNCH SYMPOSIUM 
TECHNICAL AND SURGICAL UPDATE ON MEGA PROSTHESIS

Chairs: Pietro Ruggieri (Italy) and Panayiotis Papagelopoulos (Greece)

12:50 Introduction
Pietro Ruggieri, Padova, Italy and Panayiotis Papagelopoulos, Athens, Greece

12:55 Modes of failure in Hinged Knee Replacements
Lee Jeys, Birmingham, United Kingdom

13:05 Crucial point in 3D printed implants - using the bone stock in primary and revision surgery
Daniel Kotrych, Szczecin, Poland

13:15 Hybrid solutions around the elbow
Thomas Schubert, Brussels, Belgium

13:25 The Buxtehude Stem: A Hip-preserving Reconstructive Solution of the Femoral Diaphysis
Hazem Wafa, Leuven, Belgium

13:35 Discussion
## Plenary Session - Sycamore Ball Room

### 13:45 - 14:15  PRESIDENTIAL LECTURE

**Chairs**: Andreas Leithner (Austria) and Ramses Forsyth (Belgium)

**13:45**  
**Multidisciplinarity: A true modern approach to musculoskeletal oncology and a pillar for EMSOS**  
Pietro Ruggieri, Department of Orthopedics and Orthopaedic Oncology, University of Padova, Padova, Italy

## Plenary Session - Sycamore Ball Room

### 14:20 - 15:00  GENERAL ASSEMBLY EMSOS

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>15:00</td>
<td>Refreshments</td>
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<tr>
<td>15:05</td>
<td>Poster Session 3 &amp; 4</td>
</tr>
</tbody>
</table>
**Endoprosthesis**

**Chair**: Hazem Wafa (Belgium)

- **301** Complication profiles and stem sparing revisions of tumor endoprostheses around the knee
  - Osman Emre Aycan, Musculoskeletal Oncology, Baitalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey

- **048** Incidence, risk factors, and clinical outcomes of periprosthetic infection after endoprosthetic reconstruction for metastases to the proximal femur
  - Shinn Kim, Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, Korea

- **207** Central adjudication committee and clinical site investigator agreement on outcomes in lower extremity oncologic endoprosthetic reconstruction: A secondary analysis of the PARITY trial
  - Michelle Ghert, McMaster University, Hamilton, Ontario, Canada

- **220** Diaphyseal endoprosthetic reconstruction for humeral metastases. Experience in a provincial referral island hospital
  - Ivan Beirutti Ruiz, Orthopaedic Surgery and Traumatology, Bone and soft tissue tumor Committee, University Hospital G. Canaria, Canary Island, Spain

- **221** Locking mechanism failure and complications in MUTARS distal femur and proximal tibia endoprostheses: Are there differences between PE, PEEK and MoM?
  - Richard Evenhuis, Department of Orthopaedic surgery, Leiden University Medical Center, Leiden, The Netherlands

- **231** Mechanical failure of distal femur megaprosthesis due to a PEEK based lock mechanism
  - Amir Sternheim, National Unit of Orthopaedic Oncology, Tel Aviv Medical Center and Sackler Medical Faculty at Tel-Aviv University, Tel Aviv, Israel

- **345** Cemented versus uncemented tumor endoprostheses at the knee: a systematic review and meta-analysis
  - Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA

**Ewing Sarcoma**

**Chair**: Catharina Dhooge (Belgium)

- **344** Pretherapeutic laboratory parameters as a predictor on overall survival in ewing sarcoma
  - Joannis Panotopoulos, Department of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria

- **131** The difference between spinal compression events of primary spinal Ewing sarcoma and metastatic spinal Ewing sarcoma
  - Hisaki Aiba, Department of Medical Oncology, Department of Orthopaedic Surgery National Cancer Center Hospital, Nagoya City University, Tokyo, Japan

- **200** Extraskeletal Ewing sarcoma : Experience in a tertiary cancer care centre of India
  - Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India

- **269** Surgical treatment of Ewing’s sarcoma of the calcaneus in children
  - Vadm Ykobys, Kyiv Cancer Center, Kyiv, Ukraine

- **290** Ewings Sarcoma of the head and neck region: long term outcomes of patients treated with a homogenous treatment protocol
  - Nehal Khanna, Department of Radiation Oncology, Tata Memorial Hospital, Mumbai, India

- **344** Pretherapeutic laboratory parameters as a predictor on overall survival in ewing sarcoma
  - Joannis Panotopoulos, Department of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria
Special Surgical Treatment

029 The use of cryotherapy as adjuvant for treatment of aggressive bone tumors, does it really work?
Ahmad Shehadeh, Department of Surgery, King Hussein Cancer Center, Amman, Jordan

189 The results of palliative surgical treatment for metastatic cancer in the spine. Single-center experience
Anatolii Diedkov, National Cancer Institute, Kyiv, Ukraine

190 Balloon kyphoplasty in the treatment of multiple myeloma: The role of level selection on multiple segmental disease of the spine
Nevzat Dabak, Department of Orthopaedics and Traumatology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey

253 Retrospective analysis of bone metastasis resection and reconstruction with megaprosthesi
Antonio Valcárcel, Hospital Universitario Virgen de la Arrixaca, Murcia, Spain

Pelvic Region

144 Patient-specific cutting guides for the resection of bone tumors involving the iliosacral joint at the pelvis
Daniel Andreas Müller, Department of Orthopedics, Balgrist University Hospital, Zurich, Switzerland

174 Spino-pelvic reconstruction combined with free vascularized fibular graft in the treatment of Ewing sarcoma
Nevzat Dabak, Department of Orthopedics and Traumatology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey

188 Analysis of late septic complications of pelvic reconstruction after internal hemipelvectomy, types I and II by Enneking, a single-center experience
Anatolii Diedkov, National Cancer Institute, Kyiv, Ukraine

265 Internal type I and I-IV hemipelvectomy for primary pelvic bone tumors and reconstruction with distal femoral structural allograft. Case series of a Cancer Center
Sergio Arroyave Rivera, Orthopedic and Traumatology, fellowship Oncological Orthopedics, Department of Oncological Orthopedics, National Institute Center, Bogotá, Colombia

286 Mid-term follow up evaluation of custom-made prostheses after pelvic resection for bone tumours: Experience of a single centre
Benedetta Spazzoli, Orthopaedic Oncology Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

320 Analysis of the results of pelvic sarcoma treatment
Nuriddin Asamedinov, Oncology and medical radiology, Tashkent State Dental Institute, Tashkent, Uzbekistan

302 Operative treatment of aneurysmal bone cysts in pelvic region, Single Center Experience
Osman Emre Aycan, Musculoskeletal Oncology, Baltalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey
Sycamore Ball Room

15:30 - 16:45  CAOS AND DIGITAL INNOVATIONS II

Chairs: Domenico Campanacci (Italy) and Arne Streitbürger (Germany)

15:30  246  Preclinical evaluation of previously identified targets for fluorescence-guided surgery in paediatric Ewing sarcoma  
Zeger Rijs, Department of Orthopedic Surgery, Leiden University Medical Center, The Netherlands  
15:37 Q&A

15:41  261  Artificial Intelligence Bot ChatGPT: is it a trustworthy and reliable source of information for patients?  
Marisa Valentini, Orthopedics and Traumatology, Medical University Graz, Graz, Austria  
15:48 Q&A

15:52  279  Treatment of severe complications following reconstructions with 3D printed implants in oncologic patients - 14 year experience  
Daniel Kotrych, Department of Orthopaedics, Traumatology and Musculoskeletal Oncology, Pomeranian Medical University of Szczecin, Poland  
15:59 Q&A

16:03  309  Fluorescence guided surgery in bone and soft tissue tumors: A systematic review of clinical and animal studies  
Erkan Okay, Department of Orthopedic Surgery, Istanbul Goztepe Prof.Dr.Suleyman Yalcin City Hospital, Istanbul, Turkey  
16:10 Q&A

16:14  113  Augmented reality as a navigation tool in orthopaedic oncology surgery  
Azzurra Paolucci, Orthopedic and Traumatology Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy  
16:21 Q&A

16:25  332  Are PSI Jigs in sarcoma resections safe? The Early Birmingham experience  
Christopher Anthony, Oncology Department, Royal Orthopaedic Hospital, Birmingham, UK  
16:32 Q&A

16:36  323  Study of customised cutting guides in the resection of primary pelvic bone tumours  
Vincent Crenn, Clinique Chirurgicale Orthopédique et Traumatologique, Hôpital Hôtel-Dieu, CHU de Nantes, Nantes, France  
16:43 Q&A

Sycamore Ball Room

16:45 - 17:00  WRAP UP

- BASIC AND TRANSLATION SCIENCE: Fabrice Fiorenza (France) and Olivier De Wever (Belgium)
- CAOS AND DIGITAL INNOVATIONS I: Philipp Funovics (Austria) and Hazem Wafa (Belgium)
- CAOS AND DIGITAL INNOVATIONS II: Domenico Campanacci (Italy) and Arne Streitbürger (Germany)

19:30 - 23:00  EMSOS 2023 Dinner - Royal Belgian Library
Willow Room

15:30 - 17:10  PATIENT SUPPORT

Chairs: Dimosthenis Andreou (Austria) and Friedl Sinnaeve (Belgium)

15:30  KEY  Interprofessional collaboration - foundation for person-centred quality cancer care
Virpi Sulosaari, European Oncology Nursing Society and Department Health and well-being, Turku University of Applied Sciences, Turku, Finland

15:50 Q&A

15:55  037  Examining patient perspectives on sarcoma surveillance: The sarcoma surveillance survey
Cara Cipriano, Department of Orthopedic Surgery, University of Pennsylvania, Philadelphia, Pennsylvania, USA

15:55  037  Examining patient perspectives on sarcoma surveillance: The sarcoma surveillance survey
Cara Cipriano, Department of Orthopedic Surgery, University of Pennsylvania, Philadelphia, Pennsylvania, USA

15:55  037  Examining patient perspectives on sarcoma surveillance: The sarcoma surveillance survey
Cara Cipriano, Department of Orthopedic Surgery, University of Pennsylvania, Philadelphia, Pennsylvania, USA

16:00  037  Examining patient perspectives on sarcoma surveillance: The sarcoma surveillance survey
Cara Cipriano, Department of Orthopedic Surgery, University of Pennsylvania, Philadelphia, Pennsylvania, USA

16:05  245  Physiotherapy treatment and early recovery of oncological patients after lung metastatic wedge resection. An observational study
Marco Cotti, RIZZOLI Orthopedic Institute, Medicina Fisica e Riabilitativa, Bologna, Italy

16:15  KEY  Patient advocacy training
Stefan Gijssels, Patient Expert Center

16:30  KEY  Aya-care from patient’s view
Tim Van Hoorenbeke, Kom op tegen Kaner, Aya Movement

16:45  KEY  The importance of peer support
Brecht Gunst, Belgian Foundation against Cancer

17:00  Discussion

Willow Room

17:10 - 17:15  WRAP UP

- PREMS and PROMS: Michelle Ghert (Canada) and Felix Shumelinsky (Belgium)
- TELEDIAGNOSTICS, REFERRAL, AI IN DIAGNOSIS: Rob Pollock (UK) and Andrea Sambri (Italy)
- PATIENT SUPPORT: Dimosthenis Andreou (Austria) and Friedl Sinnaeve (Belgium)

19:30 - 23:00  EMSOS 2023 Dinner - Royal Belgian Library
Programme
Friday 12 May 2023
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<td>Welcome</td>
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<tr>
<td>09:02</td>
<td>318</td>
<td>Does reconstruction after internal P2 hemipelvectomy affect oncologic and functional outcome?</td>
<td>Burkhard Lehner, Orthopedic university clinic, Heidelberg university hospital, Heidelberg, Germany</td>
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<td>09:09</td>
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<tr>
<td>09:11</td>
<td>162</td>
<td>Reconstruction after pelvic bone massive resection: Evolution and actuality of 3D-printed technology</td>
<td>Lorenzo Andreani, University of Pisa, Department of orthopedics and Trauma Surgery, University of Pisa, Pisa, Italy</td>
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<td>09:18</td>
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<td>09:20</td>
<td>263</td>
<td>Double approach for internal hemipelvectomy: Pararectal and Kocher Langenbeck incision</td>
<td>Hazem Wafa, Department of Orthopaedics, University Hospital Leuven, Belgium</td>
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<td>09:27</td>
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<tr>
<td>09:29</td>
<td>143</td>
<td>The effect of preoperative embolization in giant cell tumors of the bone localized in the iliosacral region of the pelvis</td>
<td>Daniel Andreas Müller, Department of Orthopedics, Balgrist University Hospital, Zurich, Switzerland</td>
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<td>09:36</td>
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<td>09:38</td>
<td>266</td>
<td>Resection margins and local recurrence after resection of pelvis and sacrum tumors using patient specific instruments (PSI) : A single institution retrospective study of 42 patients</td>
<td>François Gouin, Service de chirurgie oncologique, Centre Léon Bérard, and Service de chirurgie orthopédique, centre médico-chirurgical des Massues, Lyon, France</td>
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<td>09:45</td>
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<tr>
<td>09:47</td>
<td>116</td>
<td>A planned multidisciplinary surgical approach to treat primary pelvic malignancies</td>
<td>Andrea Montanari, Orthopedic and Traumatology Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy</td>
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<td>09:54</td>
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<tr>
<td>09:56</td>
<td>078</td>
<td>Outcomes following pedestal cup reconstruction of (impending) pathological fractures of the acetabulum due to metastatic bone disease</td>
<td>Jonathan Macdonald, Orthopaedic Oncology, Royal Orthopaedic Hospital, Birmingham, UK</td>
<td></td>
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<tr>
<td>10:05</td>
<td>070</td>
<td>Cytogenetic characterization of retroperitoneal dedifferentiated liposarcoma: correlation with metabolic and lipidomic profiles and response to treatment</td>
<td>Hugo Miguel Miranda, Department of Oncology, Centro Hospitalar Universitário do Porto, Porto, Portugal</td>
<td></td>
<td>10:12</td>
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<tr>
<td>10:15</td>
<td>334</td>
<td>Extra-corporally irradiated autografts for reconstruction of peri-acetabular Ewing’s sarcoma after neo-adjuvant proton beam therapy</td>
<td>Philipp Funovics, Department of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria</td>
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<tr>
<td>10:24</td>
<td>119-FP</td>
<td>Aneurysmal bone cyst of the pelvis and sacrum: A single-center study of 17 patients</td>
<td>Nils Deventer, Department of Orthopedics and Tumororthopedics, University Hospital Muenster, University Hospital Muenster, Muenster, Germany</td>
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<td>10:30</td>
<td>Refreshments</td>
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<td>10:35</td>
<td>Poster Session 5 &amp; 6</td>
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### RECONSTRUCTION IN THE YOUNG AND UNUSUAL LOCATIONS

**Willow Room**

**09:05 - 10:30**

**Chairs**: Ajay Puri (India) and Michiel van de Sande (The Netherlands)

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<th>Presenter</th>
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<tbody>
<tr>
<td>09:05</td>
<td>045</td>
<td>Total humerus reconstruction for oncologic resection and complex arthroplasty</td>
<td>Matthew Houdek, Department of Orthopedic Surgery, Mayo Clinic, Rochester, MN USA</td>
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<tr>
<td>09:12</td>
<td>342</td>
<td>Results of navigated extended costo-transversectomies by a muscle sparing technique for musculoskeletal tumors of the thoracic spine</td>
<td>Philipp Funovics, Department of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria</td>
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<tr>
<td>09:19</td>
<td>083</td>
<td>Radius neck to humerus trochea transposition arthroplasty after proximal ulna resection</td>
<td>Ajay Puri, Orthopaedic Oncology, Tata Memorial Centre, Mumbai, India</td>
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<tr>
<td>09:26</td>
<td>084</td>
<td>Surgical phocomelia - A limb salvage option for upper limb sarcomas instead of shoulder disarticulation</td>
<td>Ajay Puri, Orthopaedic Oncology, Tata Memorial Centre, Mumbai, India</td>
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<td>09:32</td>
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<td>Q&amp;A</td>
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<tr>
<td>09:36</td>
<td>155</td>
<td>Slipped capital femoral epiphysis after tumorprosthesis implantation</td>
<td>Markus Nottrott, Department of Orthopedic Oncology, University Hospital Essen, Germany</td>
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<tr>
<td>09:43</td>
<td>352</td>
<td>Outcome of reconstruction with irradiated tumour bone in paediatric malignant bone tumours</td>
<td>Manu Paul, Department of Surgical Oncology, Regional Cancer Centre thiruvananthapuram, Thiruvananthapuram, India</td>
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<tr>
<td>09:50</td>
<td>333</td>
<td>Intercalary reconstruction with vascularized fibula after resection for primary bone tumors of the Tibia</td>
<td>Domenico Andrea Campanacci, Orthopedic Oncology Unit, Careggi University Hospital, Firenze, Italy</td>
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<td>09:57</td>
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<td>Q&amp;A</td>
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<td>10:00</td>
<td>051</td>
<td>Avoiding length discrepancy after massive resection of young children using lengthening nail as primary synthesis of the reconstruction</td>
<td>Laura Campanacci, Orthopaedic Oncology Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy</td>
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<tr>
<td>10:07</td>
<td>181</td>
<td>Resurfaced allograft-prosthetic composite for proximal humerus reconstruction in children with bone tumors</td>
<td>Costantino Errani, Clinica Ortopedica e Traumatologica III a prevalente indirizzo Oncologico, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy</td>
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<tr>
<td>10:14</td>
<td>305</td>
<td>Allograft prosthetic composites in growing children: our experience</td>
<td>Michele Boffano, Orthopaedic Oncology Unit, Città della Salute e della Scienza, Torino, Italy</td>
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<td>10:21</td>
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<td>Q&amp;A</td>
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<tr>
<td>10:24</td>
<td>298-FP</td>
<td>Challenges following lower limb amputation in children</td>
<td>Burkhard Lehner, Department of Orthopaedics, Heidelberg University Hospital, Heidelberg, Germany</td>
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<td>10:28</td>
<td>269-FP</td>
<td>Surgical treatment of Ewing’s sarcoma of the calcaneus in children</td>
<td>Vadym Kobys, Kyiv Cancer Center, Kyiv, Ukraine</td>
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<td>Poster Session 5 &amp; 6</td>
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Chestnut Room

10:35 - 10:55 POSTER SESSION 5 & 6

10:35 - 10:55 POSTER SESSION 5 - Kiosk 1

Chair: Hazem Wafa (Belgium)

**Bone Reconstruction and/or Young Children**

060 Surgical treatment of malignant bone tumors of the upper limb in children. A surgical challenge
Salom Mart, Tumor Unit, Orthopedic Surgery, Hospital Universitario y Politécnico La Fe, Valencia, Spain

359 Patient specific instrumentation versus surgical navigation: Which one provides better oncological and functional results in bone tumour resection? A systematic review
Alessandro Bruschi, Orthopaedic Oncology Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

092 Distal fibula reconstruction in primary malignant tumours
Adyb - Adrian Khal, Department of Paediatric Orthopaedics, AP-HM Timone Enfants, Marseille, France and Regina Maria Private Health Care Network, Cluj-Napoca, Romania

127 Nailing of long bone metastases: Indications and results of carbon fiber nails
Pietro Ruggieri, Department of Orthopedics and Orthopedic oncology, University of Padova, Padova, Italy

228 When and which reverse shoulder arthroplasty (RSA) should be used in tumor surgery?
Benedetta Spazzoli, Orthopaedic Oncology Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

268 Tibial turn-up in oncological reconstruction: Rationale alternative for massive distal femur bone loss. Case report
Sergio Arroyave Rivera, Orthopedic and Traumatology, fellowship Oncological Orthopedics, Department of Oncological Orthopedics, National Institute Center, Bogotá, Colombia

282 Collapse of the mechanical tumor prosthesis stretching mechanism: Rescue with electromagnetic expandable prosthesis
Inês Balacó, Department of Pediatric Orthopaedics, Hospital Pediátrico, CHUC, EPE, Coimbra, Portugal

356 Extended distal femur resection: Megaprosthesis with bone allograft augmentation vs total femur prosthesis
Alessandro Bruschi, Orthopaedic Oncology Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

**Giant Cell Tumours**

091 Custom-made 3D-printed prosthesis after resection of a voluminous giant cell tumour recurrence in pelvis
Adyb - Adrian Khal, Department of Paediatric Orthopaedics, AP-HM Timone Enfants, Marseille, France and Regina Maria Private Health Care Network, Cluj-Napoca, Romania

165 Tibia localisation and curettage are major risk factors for local recurrence in giant cell tumor of bone
Michal Mahdal, First Department of Orthopedic Surgery, St. Anne,Äs University Hospital and Faculty of Medicine, Masaryk University, Brno, Czech Republic

194 Outcomes of surgical treatment for localized tenosynovial giant-cell tumor of the foot and ankle: A case series
Edoardo Ipponi, Department of Orthopedics and Trauma Surgery, University of Pisa, Pisa, Italy

348 Does subchondral bone grafting minimize degenerative changes and fracture risk in Giant Cell Tumor treatment of the extremities?
Joseph Benevenia, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School, Newark, NJ, US
**Poster Session 6 - Kiosk 2**

**Chair:** Ramses Forsyth (Belgium)

**Benign Tumors and Pseudotumors**

**036** Brown tumors: Retrospective analysis of 26 cases  
*Onur Karaca, Department of Orthopedics and Traumatology, Ankara University, Ankara, Turkey*

**062** Novel navigation-guided surgical technique for treatment of pathologic bone lesions  
*Ron Batash, Orthopedic Division, Barzilai Medical Center, Ashkelon, Israel and Faculty of Medicine, Ben Gurion University of the Negev, Israel*

**119** Aneurysmal bone cyst of the pelvis and sacrum: A single-center study of 17 patients  
*Nils Deventer, Department of Orthopedics and Tumororthopedics, University Hospital Muenster, University Hospital Muenster, Muenster, Germany*

**209** Use of synthetic bone graft PRO-DENSE(TM) in the surgical treatment of benign bone tumors  
*María García Carrasco, Tumors and Reconstructive Surgery Unit, Orthopaedic Surgery Department, Vall d’Hebron University Hospital, Universitat Autònoma de Barcelona, Barcelona, Spain*

**235** The clinical outcomes of using bioactive glass and tricalcium phosphate in the surgical treatment of benign bone tumors  
*Erhan Okay, Department of Orthopaedics and Traumatology, Istanbul Medeniyet University Goztepe Prof.Dr.Suleyman Yalcin City Hospital, Istanbul, Turkey*

**251** Natural history of solitary osteochondroma: Review of 103 cases of solitary osteochondroma  
*Sungmin Kim, Department of Orthopedic Surgery, Chonnam National University Hospital, Gwangju, Republic of Korea*

**300** Curopcy and steroid injection in proximal humerus unicameral bone cysts: How many times should we repeat?  
*Osman Emre Aycan, Musculoskeletal Oncology, Baltalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey*

**336** Should periprosthetic pseudotumors be treated like soft tissue sarcomas?  
*Michele Boffano, Orthopaedic Oncology Unit, Città della Salute e della Scienza, Torino, Italy*

**Synovial Sarcoma**

**197** Outcome and prognosis of synovial sarcoma: Experience of a tertiary care centre of India  
*Himanshu Rohela, Orthopaedic oncology, Rajiv gandhi cancer institute and research center, Delhi, India*

**346** Predictors of functional results in patients undergoing synovial sarcoma surgery  
*Ana Peiró Ibañez, COT, Hopsital de la Santa Cree i Sant Pau, Barcelona, Spain*
Plenary Session - Sycamore Ball Room

11:00 - 12:25   CAMPANACCI LECTURE

Chairs: Pietro Ruggieri (Italy) and Gwen Sys (Belgium)

11:00   Pitfalls to avoid in bone reconstruction of children. Critical considerations after 40 years of experience
Marco Manfrini, Third Orthopedic and Traumatologic Clinic Prevalently Oncologic, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
### Sycamore Ball Room

**II:30 - I2:30  ** TREATMENT SEVERITY

*Chairs: Joseph Benevenia (USA) and Christiane Jungels (Belgium)*

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>11:30</td>
<td>Welcome</td>
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| 11:31 | **KEY**
|       | Borderline pathology: Where free margins meet severe functional loss     |
|       | *Dieter Dammerer, Department of Orthopaedics and Traumatology, Krems University Hospital, Krems, Austria* |
| 11:46 | Q&A                                                                       |
| 11:50 | 335  
|       | The role of margins of resection in chondrosarcoma                       |
|       | *Frank Traub, Department of Orthopedics and Traumatology, University Medical Center of the Johannes Gutenberg University Mainz, Mainz, Germany* |
| 11:55 | Q&A                                                                       |
| 12:00 | 105  
|       | Surgical margins in soft tissue sarcomas - how much is enough?          |
|       | *Ajay Puri, Orthopaedic Oncology, Tata Memorial Centre, Mumbai, India*   |
| 12:05 | Q&A                                                                       |
| 12:00 | 172  
|       | Patterns and impact of local recurrence for conventional central chondrosarcoma in Norway. Who, how and when to follow-up |
|       | *Joachim Thorkildsen, Division of orthopaedic surgery, Oslo University Hospital, and Cancer Registry of Norway, Oslo, Norway* |
| 12:05 | Q&A                                                                       |
| 12:00 | 192  
|       | Non oncologic and oncologic causes of revision surgeries in soft tissue sarcomas |
|       | *Diane Ji Yun Yoon, Université Paris Cité, Inserm U1132 BIOSCAR, Paris, France* |
| 12:10 | Q&A                                                                       |
| 12:10 | 056  
|       | Comparison of reconstructive techniques for metastatic disease in the proximal humerus |
|       | *Matthew Houdek, Department of Orthopedic Surgery, Mayo Clinic, Rochester, MN, USA* |
| 12:20 | Q&A                                                                       |
| 12:20 | 140  
|       | How do transarticular skip metastases in sarcoma patients affect local treatment and outcome? A case series of four patients |
|       | *Nina Myline Engel, University hospital Essen, Essen, Germany*            |
| 12:25 | Q&A                                                                       |

**12:30 - 13:30  ** Lunch & Poster Viewing
Willow Room

II:30 - II:30  SHARED DECISION MAKING BONE RECONSTRUCTION OPTIONS

Chairs : Jos Bramer (the Netherlands) and Walid Ebeid (Egypt)

11:30 Welcome

11:31  KEY
Shared decision making: Limb saving surgery, rotationplasty or amputation in children
Jos Bramer, Department of Orthopedic Surgery, Amsterdam University Medical Centers,
Amsterdam, The Netherlands
11:46 Q&A

11:51  280
Shared decision making in primary malignant bone tumor surgery in children and young adults. Decisional conflict, decisional regret and perception in children, young adults, their parents and physicians
Kiki Blom, Amsterdam UMC location University of Amsterdam, Department of Orthopedic Surgery and Sports Medicine, Amsterdam, and Princess Máxima Center for Pediatric Oncology, Utrecht, The Netherlands

11:56  149
What are the indications and survivorship of tumor endoprosthetic reconstructions for patients with extremity metastatic bone disease?
Christopher Hamad, Department of Orthopaedic Surgery, University of California, Los Angeles, Santa Monica, CA, USA

12:01  311
Evaluation of the long term functional outcome and quality of life after rotationplasty in the management of primary malignant bone tumours about the knee in children
Hazem Wafa, Department of Orthopaedic Surgery, University Hospital Leuven, Leuven, Belgium

12:06  341
Long-term outcomes of osteoarthritis after a rotationplasty
Gitte Krebbek, Department of Orthopedics, Amsterdam UMC, Amsterdam, The Netherlands

12:11  316
Management of a complex Winkelmann B2 rotationplasty for a high-grade osteosarcoma of the hip: A case report
Robin Evrard, Institut de Recherche Expérimentale et Clinique, UCLouvain, Brussels and Cliniques Universitaires Saint-Luc, Brussels, Belgium

12:16  031
Comparison of limb salvage with mega prosthesis vs auto graft reconstruction after cryotherapy in adolescent patients with limb sarcomas
Ilyas Rafi, Surgical Oncology Department, Shaukat Khanum Memorial Cancer Hospital & Research Center, Lahore, Pakistan

12:21  220-FP
Diaphyseal endoprosthetic reconstruction for humeral metastases. Experience in a provincial referral island hospital
Ivan Beirutti Ruiz, Orthopaedic Surgery and Traumatology, Bone and soft tissue tumor Committee, University Hospital G. Canaria, Canary Island, Spain

12:23 Q&A

12:30 - 13:30 Lunch & Poster Viewing
Plenary Session - Sycamore Ball Room

13:30 - 15:00 HOW DO WE GO FURTHER TO ACHIEVE STRUCTURAL COLLABORATION?

Chairs: Gwen Sys (Belgium) and Paul Jutte (the Netherlands)

13:30 Welcome

13:32 KEY Experience with Euracan
Jean-Yves Blay, Department Medical Oncology, Centre Léon Bérard, Lyon, France

13:52 KEY A European data space to advance sarcomacCare – the IDEA4RC and Blueberry initiatives
Gijs Geleijnse, Data Science, IKNL Netherlands Comprehensive Cancer Organisation, Eindhoven, The Netherlands & Andreas Muth, Department of Surgery, Sahlgrenska University Hospital, Gothenburg, Sweden

14:12 KEY Completion of the Surveillance AFter Extremity Tumor surgery (SAFETY) 200 Patient international randomized controlled trial: Feasibility metrics and the definitive trial
Michelle Ghert, Department of Orthopaedic Surgery, McMaster University, Hamilton, Canada and University of Maryland, Baltimore, USA

14:32 138 Controversies in the management of patients with soft tissue sarcoma: The top recommendations of the Conference on State of Science in Sarcoma (CSSS) 2022
Dimosthenis Andreou, Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria

14:42 Q&A - Discussion

15:00 - 15:30 Refreshments

15:05 - 15:20 Poster Session 7 & 8
**Chestnut Room**

**15:05 - 15:25  POSTER SESSION 7 & 8**

**15:05 - 15:25  POSTER SESSION 7 - Kiosk 1**

*Chair: Annelies Van Beeck (Belgium)*

**Osteosarcoma**

321  Genetic phenotype in osteosarcoma patients  
*Saidrasul Nasirov, Oncology and medical radiology, Tashkent Medical Academy, Tashkent, Uzbekistan*

126  The importance of diagnosis in low-grade central osteosarcoma  
*Hisaki Aiba, Third Orthopedic and Traumatologic Clinic Preventally Oncologic, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy and Department of Orthopaedic Surgery, Nagoya City University, Nagoya, Japan*

177  A rare localization for osteosarcoma: Proximal fibula  
*Nevzat Dabak, Department of Orthopedics and Traumatology, Ondokuz Mayis University, Samsun, Turkey*

107  Characteristics and outcomes of osteosarcomas treated in a Portuguese referral center  
*Ridhi Ranchor, Medical Oncology Department, Centro Hospitalar Universitário do Porto, Porto, Portugal*

**Surgical treatment and Invasive Techniques**

027  The outcome of 3-D printing techniques and custom made joint sparing implants as a reconstructive modality for juxtaarticular bone sarcoma: A review of 50 patients in single institute  
*Ahmad Shehadeh, Department of Surgery, King Hussein Cancer Center, Amman, Jordan*

139  Advantages and risks of wound drains in tumor spine surgery: A multicenter surveillance study  
*Sebastian Walter, University Hospital Cologne, Department of Orthopedic Surgery, Cologne, Germany*

238  Functional outcome of Pirogoff amputation. About two cases  
*Roberto Carlos Garcia Maroto, Orthopaedic Surgery and Traumatology, Musculoskeletal Sarcomas Department, Hospital Clinico San Carlos, Madrid, Spain*

247  Motor replacement after neoadjuvant radiotherapy in upper limb sarcoma surgery - what point of time is reasonable?  
*Christian Spiegel, Trauma-, Hand- and Reconstructive Surgery, University Hospital Jena, Jena, Germany*

298  Challenges Following Lower Limb Amputation in Children  
*Burkhard Lehner, Department of Orthopaedics, Heidelberg University Hospital, Heidelberg Germany*

328  Gap Nail in the management of pediatric bone tumor pathology  
*Antonio Valcárcel, Hospital Universitario Virgen de la Arrixaca, Murcia, Spain*

330  Osteoarticular allograft rescue of the proximal femur for post-traumatic fracture  
*Antonio Valcárcel, Hospital Universitario Virgen de la Arrixaca, Murcia, Spain*

331  3D Virtual reality planning and Browser-assisted musculoskeletal tumor surgery  
*Antonio Valcárcel, Hospital Universitario Virgen de la Arrixaca, Murcia, Spain*
Case Sharing

008  Malignant melanoma of the foot: The tip of an iceberg - a creeping danger that lurks beneath the surface. Healing by secondary intention - a valid treatment modality
Eyrique Goh Boay Heong, Orthopedic Oncology unit, Orthopedic Department, Hospital Kuala Lumpur, Malaysia

009  Dermatofibrosarcoma Protuberans with fibrosarcomatous transformation: A case report & an overview
Eyrique Goh Boay Heong, Orthopedic Oncology unit, Orthopedic Department, Hospital Kuala Lumpur, Malaysia

035  Factors affecting recurrence in chondroblastoma: Retrospective analysis of 48 cases
Mustafa Onur Karaca, Department of Orthopedics and Traumatology, Ankara University, Ankara, Turkey

079  A rare case report of paraganglioma in forearm
Erhan Okay, Department of Orthopedics and Traumatology, Istanbul Medeniyet University, Prof. Dr. Suleyman Yalcin City Hospital, Istanbul, Turkey

080  Intraosseous schwannoma of the proximal radius
Erhan Okay, Department of Orthopedics and Traumatology, Istanbul Medeniyet University, Prof. Dr. Suleyman Yalcin City Hospital, Istanbul, Turkey

081  A peculiar extra-axial chordoma of the proximal humerus
Korhan Ozkan, Department of Orthopedics and Traumatology, Istanbul Medeniyet University, Prof. Dr. Suleyman Yalcin City Hospital, Istanbul, Turkey

161  Angioleiomyoma of the foot: Clinical and functional outcomes of surgical treatment in a case series
Edoardo Ipponi, Department of Orthopedics and Trauma Surgery, University of Pisa, Pisa, Italy

176  A rare localization of metastasis of pleuro-pulmonary blastoma in a four year-old-boy
Nevzat Dabak, Department of Orthopedics and Traumatology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey

259  Osseous metastases of uterine Leiomyosarcoma; Analysis of survival & surgical management
Şahin Çepni, Department of Orthopedics and Traumatology, Ankara City Hospital, Ankara, Turkey
Plenary Session - Sycamore Ball Room

15:30 - 16:45  CASE SHARING, PANEL DISCUSSION OF DIFFICULT CASES

Chairs : Davide Donati (Italy) and Dietmar Dammerer (Austria)

Plenary Session - Sycamore Ball Room

16:45 - 17:30  CLOSING CEREMONY - AWARD CEREMONY

16:45

Award Ceremony
Pietro Ruggieri and Andreas Leithner

Closing EMSOS 2023
Ramses Forsyth and Gwen Sys

Welcome EMSOS 2024
Daniel Kotrych