Welcome to ECTS2019
11-14 MAY 2019
BUDAPEST
HUNGARY

ECTS 2019
46th European Calcified Tissue Society Congress

Final Programme
Join the ECTS Community

- Substantially reduced registration fee for ECTS Congress
- Access to other ECTS Events and IFMRS activities
- Monthly member e–newsletter
- Society App
- Opportunity to be actively involved in the organisation of the ECTS and be part of an international network of Key Opinion Leaders in the field
- Access to session recordings of ECTS and ECTS Academy Webinars
- Best research: ECTS Fellowship and ECTS Academy
- Best education: access to the ECTS Resource Center, our online educational library
- Access to the Members’ Lounge with members directory

Visit us at the ECTS Booth

@ECTSoc   @ECTS_soc
Email: ects@ectsoc.org  www.ectsoc.org
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Welcome
Acknowledgement

ECTS thanks the following organisations for their continued support of the society.

ECTS thanks the following organisations for their support of the 46th Calcified Tissue Society Congress 2019 in Budapest.

Platinum Supporter

Gold Supporters

Additional Supporters and Educational Grants
Welcome Message

Dear Colleagues,

It is a great pleasure to invite you to the ECTS 2019, the 46th annual meeting of the European Calcified Tissue Society. ECTS 2019 will take place from 11-14 May 2019 in Budapest, Hungary, with pre-congress day on 10 May 2019.

ECTS serves as a forum for researchers and clinicians working in the musculoskeletal field to discover and discuss the latest advances and controversies in research and in the daily care of patients. A special highlight this year will be the 50th year anniversary of bisphosphonates. Everyone in the field knows their history and impact on clinical medicine, but what will be their future? A forward looking session will review future developments.

Also new this year, the meeting will include relevant hot clinical sessions to help managing patients going along the newest knowledge in the field.

The educational aspects of ECTS 2019 will include pre-meeting courses, working group meetings and workshops. There will be many interactive sessions: Meet-the-Experts, ECTS-ASBMR clinical debate and the Opening Ceremony will review ECTS Practice Guidelines issued during the past year. As in previous years, ECTS 2019 will include a New Investigator programme fully organised by our young leaders, the ECTS Academy.

This programme will give the opportunity to new investigators to network, share common interests, receiving mentoring advices and start building their own collaborative projects at an international level. Collaboration will also be highlighted in several joint sessions with international bone societies: ASBMR and our partners from China, Japan and Korea.

ECTS Congress is recognised a successful scientific meeting thanks to the large number of contributions coming via abstract submissions. We are committed to offer large visibility to promising abstracts by including them in plenary oral sessions, poster orals, SNAPS or via dedicated poster viewing sessions. We therefore, strongly encourage you to take note of the abstract submission deadline and to send your abstracts in due time.

Whether you are a young investigator, clinician, basic scientist, nurse or allied health professional, industry representative, you will be exposed to the latest topics in our field. Take part in this exciting meeting and stay tuned for more information coming soon. We look forward to welcoming you in Budapest.

Warm regards,

Anna Teti

SPC Chair
Awards
Awards

Awardee Wall

We are excited to introduce the awardee wall, new to the ECTS 2019 Congress. The wall will be positioned at the end of the Bartók corridor and will display all award winners.

ECTS Grants and Awards

ECTS Named Awards

ECTS Steven Boonen Clinical Research Award

In memory of Professor Steven Boonen, who sadly passed away during the ECTS 50th Anniversary Congress in Lisbon on 20 May 2013. Steven was an internationally recognised expert in the field of osteoporosis and metabolic bone disease, who was actively involved in bone disease research, education and patient care. His translational and clinical research activities focused on determinants of age-related skeletal fragility and on strategies to reduce fracture risk. Specific areas of expertise included musculoskeletal frailty, osteoporosis in old age and innovative trial design. He was an active and regular contributor to the ECTS congress for many years, and was also a member of the ECTS Board of Directors.

This award is open, by nomination only, to medical doctors who have made significant progress and contribution to the field of clinical bone disease research.

The 2019 Steven Boonen Award is supported by Amgen (Europe) GmbH

Saturday, 11 May 2019, 17:15 – 17:45, Pàtria, Award Winner: Roger Bouillon (Belgium)

ECTS Philippe Bordier Clinical Award

Doctor Philippe Bordier (1927–1977) contributed significantly to the bone field by developing bone histomorphometry, which he applied to the analysis of several bone diseases. His work and dynamism in science has been recognised in Europe and the United States.

This award, by nomination only, is open to individuals who have made a significant clinical contribution to the field of bone and calcified tissue.

Sunday, 12 May 2019, at 12:40, Awardee Wall, Award Winner: Christian Meier (Switzerland)

ECTS Iain T Boyle Award

In memory of Professor Iain T Boyle (1935–2001) who contributed greatly to the field of mineral metabolism and whose work on osteoporosis was known and acclaimed nationally and internationally.

The award is open, by nomination only, to young scientists who have made significant progress and contribution to the field of bone and calcified tissue.

Sunday, 12 May 2019, at 12:40, Awardee Wall, Award Winner: Björn Busse (Germany)
ECTS Mike Horton Basic/Translational Award
Professor Mike Horton (1948–2010) was a hematologist-turned-basic scientist who made significant contributions in the bone field and beyond. He performed pioneering work in osteoclast biology which resulted, among other things, in the recognition of the alpha v beta 3 integrin as a therapeutic target for inhibiting bone resorption. His warm personality and wide-ranging interests inspired many young researchers.

The ECTS Mike Horton Award is open, by nominations only, to individuals who have made a significant basic or translational contribution to the field of bone and calcified tissue.

Sunday, 12 May 2019, at 12:40, Awardee Wall, Award Winner: Miep Helfrich (United Kingdom)

ECTS Fellowship Awards
ECTS is presenting two one-year fellowships this year, which are available to our New Investigator members. Fellowships are open to both pre-clinical and clinical researchers and will be used exclusively to fund research in the area of bone disease.

Monday, 13 May 2019, at 13:00, Awardee Wall, Award Winner: Valentina Capo (Italy) and Elena Tsourdi (Germany)

ECTS Webinar Award
Education is at the heart of ECTS activities. Since our foundation, ECTS has been providing through its congresses, trainings, and workshops standard of practice in the musculoskeletal field. Since 2013, we have been pioneering e-learning through the establishment of Congress Highlights and Webcasts and since 2016 we moved to the next stage of e-learning services establishing two series of webinars:

ERC Grant Winners Webinars organized by the ECTS Academy
Bone, Muscle & Beyond Series

The ECTS Webinar Award is aimed at recognizing the best Clinical and Basic Science ECTS Webinar organized in 2018. The winners will be selected by the E-Learning Action Group and announced during the ECTS 2019 Closing Ceremony.

Tuesday, 14 May, 13:45 – 14:30, Pàtria

ECTS 2019 Lecture Award
ECTS Excellence in Research Award
With the ECTS Excellence in Research Award ECTS recognizes scientists who substantially advanced the field of musculoskeletal research. The recipient of the award is selected by the ECTS Board of Directors from the group of invited speakers of the ECTS Annual Congress.

Monday, 13 May, 10:50 – 11:00, Pàtria, Award Winner: Klaus Engelke (Germany)
ECTS 2019 Abstract and Congress Awards

ECTS-AgNovos New Investigator Awards
These awards are available to ECTS members who submit an abstract to the congress and who satisfy the specific award criteria. The award winners were selected by the abstract review panel based on abstract scores.

The ECTS-AgNovos New Investigator Awards are supported by AgNovos Healthcare
Tuesday, 14 May, 13:45 – 14:30, Pàtria

ECTS-Bone Reports New Investigator Awards
These awards are available to ECTS members who submit an abstract to the congress and who satisfy the specific award criteria. The award winners were selected by the abstract review panel based on abstract scores.

The ECTS-Bone Reports New Investigator Awards are supported by Elsevier Inc.
Tuesday, 14 May, 13:45 – 14:30, Pàtria

ECTS-ICCBH New Investigator Awards
These awards are available to ECTS members who submit an abstract to the “Paediatric bone diseases” category to the congress and who satisfy the specific award criteria. The award winners were selected by the abstract review panel based on abstract scores.

The ECTS-ICCBH New Investigator Awards are supported by International Conference on Children’s Bone Health (ICCBH)
Tuesday, 14 May, 13:45 – 14:30, Pàtria

ECTS Travel Awards
These awards are available to ECTS members who submit an abstract to the congress and who satisfy the specific award criteria. The award winners were selected by the abstract review panel based on abstract scores.
Tuesday, 14 May, 13:45 – 14:30, Pàtria

ECTS Allied Health Professional Award
These awards are available to ECTS members who submit an abstract to the congress and who satisfy the specific award criteria. The award winners will be selected during the AHP Sessions and presented during the ECTS 2019 Closing Ceremony.
Tuesday, 14 May, 13:45 – 14:30, Pàtria
**East-Meets-West Research Award**
As part of the East-Meets-West programme, ECTS will award the top three highest ranking abstracts submitted from China, Japan, Korea and India. For the third year, ECTS holds a special East-Meets-West programme as part of its Annual Congress. The East-Meets-West programme is aimed at promoting scientific exchange with colleagues from Asia and is a partnership initiative with the Chinese Society of Osteoporosis and Bone Mineral Research (CSOBMR), The Japanese Society for Bone and Mineral Research (JSBMR), the Korean Society of Bone and Mineral Research (KSBMR) and the Korean Society of Osteoporosis (KSO).

Tuesday, 14 May, 13:45 – 14:30, Pàtria

**ECTS Academy-IBI Poster Focus Award**
Two awards are available for New Investigators presenting during the Poster Focus session. These awards are organised by the ECTS Academy and supported by IBI

Tuesday, 14 May, 13:45 – 14:30, Pàtria

**ECTS Academy-IBI New Investigator Seminar Award**
Organised by the ECTS Academy, this award will reward the Best Presentation from the NI Seminar. This Award is supported by IBI

Tuesday, 14 May, 13:45 – 14:30, Pàtria

**IFMRS Travel Grants**
IFMRS travel grants are available for members of IFMRS member societies to attend any IFMRS member society congress.

The 2019 IFMRS Travel Grants are supported and independently organised by the International Federation of Musculoskeletal Research Societies.

Recipients will be listed on the Awardee Wall.
3rd ECTS Charity Event
Actioned by the ECTS & ECTS Academy

At ECTS 2019 - 12 May 2019
Budapest, Hungary

With your friends and colleagues form a team, join the ECTS Charity Football Tournament and help us fundraising for the National, Hungarian Federation of Patients with Rare and Congenital Disorders

Supporters are also welcome to join the event

Sunday 12 May 2019 starting at 20:30hrs

MOM Swimming Pool and Sports Center
2 minute walk from the congress center

For more information, visit ECTS Booth or NI Lounge
## Programme Overview

### Friday, 10 May 2019

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<th>Time</th>
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<td>National Day: Secondary Osteoporosis – Update for Everyday Practice</td>
<td>ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology</td>
<td>Working Group 1: Animal Models</td>
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<td>National Day: Discussions &amp; Networking</td>
<td>ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology</td>
<td>Working Group 2: Rheumatic Diseases &amp; Bone</td>
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<td>Lunch Break</td>
<td>Working Group 3: Bone Bioengineering, Regeneration and Implants</td>
<td>Working Group 3: Bone Bioengineering, Regeneration and Implants</td>
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<td>11:30</td>
<td>National Day: Central and Eastern European Expert Meeting</td>
<td>ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology</td>
<td>Working Group 4: Non-Mammalian Models</td>
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<td>12:00</td>
<td>Lunch Break</td>
<td>Working Group 5: Osteoclasts</td>
<td>Working Group 4: Non-Mammalian Models</td>
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<td>Working Group 6: Rare Bone Diseases</td>
<td>Working Group 5: Osteoclasts</td>
<td>Working Group 5: Osteoclasts</td>
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<tr>
<td>12:45</td>
<td>East Meets West Symposium: Mobility &amp; Longevity</td>
<td>Working Group 6: Rare Bone Diseases</td>
<td>Working Group 6: Rare Bone Diseases</td>
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<td>13:00</td>
<td>Lunch Break</td>
<td>Working Group 7: Cancer and Bone</td>
<td>Working Group 7: Cancer and Bone</td>
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<td>Working Group 8: Cartilage Pathophysiology</td>
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<td>14:00</td>
<td>National Day: Central and Eastern European Expert Meeting</td>
<td>ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology</td>
<td>Working Group 9: Imaging Bone Strength</td>
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<td>Coffee Break</td>
<td>Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis</td>
<td>Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis</td>
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<td>East Meets West Symposium: Mobility &amp; Longevity</td>
<td>Working Group 10: Paget Disease of Bone</td>
<td>Working Group 10: Paget Disease of Bone</td>
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<td>16:00</td>
<td>Coffee Break</td>
<td>Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis</td>
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<td>17:00</td>
<td>Next Generation Synergy Session</td>
<td>Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis</td>
<td>Working Group 12: New Investigators</td>
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**Legend:**
- Clinical/Public Health
- Basic/Translational
- Clinical & Basic
- New Investigators
Programme Overview

08:30 - 08:45: National Day

09:00 - 09:15: Secondary Osteoporosis – Update for Everyday Practice

10:00 - 10:15: National Day

10:30 - 10:45: ECTS – ICCBH Workshop on Rare Bone Diseases

11:00 - 11:15: Working Group 1: Animal Models

11:45 - 12:00: Working Group 2: Rheumatic Diseases and Bone

12:30 - 12:45: Working Group 3: Bone Bioengineering, Regeneration and Implants

13:00 - 13:15: Lunch Break


14:15 - 14:30: Working Group 5: Osteoclasts

14:30 - 14:45: Working Group 6: Rare Bone Diseases

15:00 - 15:15: Working Group 7: Cancer and Bone

15:15 - 15:30: Working Group 8: Cartilage Pathophysiology

15:45 - 16:00: Working Group 9: Imaging Bone Strength

16:15 - 16:30: Working Group 10: Paget Disease of Bone

18:00 - 18:15: Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis

18:45 - 19:00: Working Group 12: Cancer and Bone

19:00 - 20:00: Coffee Break

20:30 - 20:45: Working Group 13: Imaging Bone Strength

20:45 - 21:00: Working Group 14: Paget Disease of Bone
## Programme Overview

### Saturday, 11 May 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>07:30</td>
<td>Pàtria</td>
<td>Welcome</td>
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<tr>
<td>08:00</td>
<td>Pàtria</td>
<td>Clinical Update 1</td>
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<td>08:30</td>
<td>Bartók</td>
<td>Basic Science Update 1: Bone Biology</td>
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<td>09:00</td>
<td>Pàtria</td>
<td>Clinical Update 2</td>
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<td>09:30</td>
<td>Bartók</td>
<td>Basic Science Update 2: Basic Science Technology</td>
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<td>10:00</td>
<td>Pàtria</td>
<td>Coffee Break / Industry Exhibition</td>
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<td>11:00</td>
<td>Pàtria</td>
<td>Clinical Update 2</td>
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<td>11:30</td>
<td>Bartók</td>
<td>East Meets West Symposium</td>
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<td>12:00</td>
<td>Pàtria</td>
<td>Lunch Break / Poster Exhibition / Industry Exhibition</td>
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<td>13:00</td>
<td>Pàtria</td>
<td>ECTS AGM</td>
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<td>Pàtria</td>
<td>Corporate Satellite Symposia</td>
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<td>Coffee Break / Poster Exhibition / Industry Exhibition</td>
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<td>15:00</td>
<td>Pàtria</td>
<td>Opening Ceremony</td>
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<td>16:00</td>
<td>Pàtria</td>
<td>Plenary Symposium 1: WIN: What is New</td>
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<td>17:00</td>
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<td>Steven Boonen Lecture</td>
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<td>Pàtria</td>
<td>ECTS/ASBMR Debate</td>
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<td>19:00</td>
<td>Pàtria</td>
<td>Welcome Reception</td>
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### Location Mapping
- **Pàtria**: Welcome, Clinical Update 1, Clinical Update 2, East Meets West Symposium, ECTS AGM, Opening Ceremony, Steven Boonen Lecture, Welcome Reception.
- **Poster Loft**: Corporate Satellite Symposia, Lunch Break / Poster Exhibition / Industry Exhibition, Posters.
**NOT TO BE MISSED:**

**Expert Forum on X-linked hypophosphatemia (XLH):** A debate will be held in which eminent experts will interactively discuss with the audience about the multifaceted feature of this debilitating rare bone disease. Supported by an educational grant from Kyowa Kirin.

**Sunday 12 May 2019, 13:30-14:30**
Presentations by Signe Beck-Nilsen & Peter Kamenicky.

**Educational Symposium ENPP1 deficiency:** from bench to clinic, a review of latest science and clinical practice in two rare diseases caused by ENPP1 deficiency—Generalized Arterial Calcification of Infancy (GACI) and Autosomal recessive hypophosphatemic rickets type 2 (ARHR2). Supported by an educational grant from Inozyme.

**Sunday 12 May 2019, 19:00-20:00**
Presentations by Frank Rutsch, Stefan Schulte-Merker, Ralf Oheim, Demetrios Braddock.

**Educational Symposium on FGF23:** all you want to know about FGF23 and its involvement in hypophosphatemia. Supported by an educational grant from Kyowa Kirin.

**Monday 13 May 2019, 13:30-14:30**
Presentations by Reinhold Urban & Christian Faul.
## Programme Overview

### Sunday, 12 May 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Pàtria</th>
<th>Bartók</th>
<th>Lehár 1+2</th>
<th>Poster Loft</th>
<th>Brahms 1</th>
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<tr>
<td>08:00</td>
<td>Workshop 1: From Fetus to Old Age</td>
<td>Workshop 1: Communication between Cells and Bone Environment</td>
<td>Concurrent Oral Presentations 1 - Clinical/Public Health</td>
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<td>Poster SNAPs 1</td>
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<td>Plenary Symposium 2: Insights from Outside</td>
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<td>12:45</td>
<td>12:40: Named Awards Ceremony at Awardee Wall</td>
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<td>13:30</td>
<td>Expert Forum: Expert View: XLH</td>
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<td>MTe 1: Real World Epidemiology for the Bone Researcher</td>
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<td>19:00</td>
<td>Mentoring Session</td>
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<td>Educational Symposium 1: ENPP1: From Bench to Clinic</td>
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- Clinical/Public Health
- Basic/Translational
- Industry Sponsored Sessions
- Clinical & Basic
- ECTS Events
- New Investigators
- AHP Sessions
- by invitation only
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<tr>
<th>Time</th>
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<tr>
<td>08:00</td>
<td>Coffee Break / Poster Exhibition / Industry Exhibition</td>
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<tr>
<td>08:00</td>
<td>Workshop 1: From Fetus to Old Age</td>
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<td>Workshop 1: Communication between Cells and Bone Environment</td>
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<td>Plenary Symposium 2: Insights from Outside</td>
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<td>Named Awards Ceremony at Awardee Wall</td>
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Programme Overview

Monday, 13 May 2019
Programme Overview

Tuesday, 14 May 2019

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<td>Plenary Oral Presentations 3: Osteoporosis and Bone Loss</td>
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Clinical/Public Health  | Basic/Translational  | Clinical & Basic  | ECTS Events

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ECTS 2019
Final Programme
Programme Overview

Friday, 10 May 2019

08:30 - Lehár 1+2
09:00 - Brahms 1
09:30 - Liszt 1

08:30 - Lehár 1+2
09:00 - Brahms 1
09:30 - Liszt 1

National Day Secondary Osteoporosis – Update for Everyday Practice
ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology

National Day Discussions & Networking
ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology

Lunch Break

National Day Central and Eastern European Expert Meeting
ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology
Working Group 1: Animal Models

Coffee Break

East Meets West Symposium Mobility & Longevity
Working Group 4: Non-Mammalian Models

Coffee Break

Next Generation Synergy Session
Working Group 8: Cartilage Pathophysiology

Clinical/Public Health
Basic/Translational
Clinical & Basic
New Investigators
Pre-Congress, Friday 10 May 2019

08:30
ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology

08:45
National Day Secondary Osteoporosis – Update for Everyday Practice

09:00
National Day

09:15
Discussion & Networking

09:30
Lunch Break

09:45
ECTS – ICCBH Workshop on Rare Bone Diseases Pathophysiology

10:00
Central and Eastern European Expert Meeting

10:15
Working Group 1: Animal Models

10:30
Working Group 2: Rheumatic Diseases and Bone

10:45
Working Group 3: Bone Bioengineering, Regeneration and Implants

11:00
Working Group 4: Non-Mammalian Models

11:15
Working Group 5: Osteoclasts

11:30
Working Group 6: Rare Bone Diseases

11:45
Working Group 7: Cancer and Bone

12:00
Coffee Break

12:15
East Meets West Symposium

12:30
Working Group 8: Cartilage Pathophysiology

12:45
Working Group 9: Imaging Bone Strength

13:00
Coffee Break

13:15
Working Group 10: Paget Disease of Bone

13:30
Working Group 11: Epigenetic Regulation of Bone Formation and Homeostasis

13:45
Working Group 12: Bone Bioengineering, Regeneration and Implants

14:00
Working Group 3: Bone Bioengineering, Regeneration and Implants

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Working Group 2: Rheumatic Diseases and Bone

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Working Group 6: Rare Bone Diseases

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Working Group 12: Bone Bioengineering, Regeneration and Implants

23:15
Working Group 3: Bone Bioengineering, Regeneration and Implants

23:30
Working Group 2: Rheumatic Diseases and Bone

23:45
Working Group 1: Animal Models
Pre-Congress ECTS 2019

Friday, 10 May 2019

10:00 – 12:00  National Day Lehár 1+2
Secondary Osteoporosis – Update for Everyday Practice
Sponsored by the Hungarian Society of Osteoporosis and Osteoarthrology
Chair: Zoltan Szekanecz (Hungary)

10:00 – 10:20  Effect of thyroid diseases on bone
Péter Lakatos (Hungary)

10:20 – 10:40  Glucocorticoids and bone health
György Nagy (Hungary)

10:40 – 11:00  Autoimmune diseases and secondary osteoporosis – effects of treatments
Zoltan Szekanecz (Hungary)

11:00 – 11:20  Osteo-Cardiology: Common links between osteoporosis and atherosclerosis
Willem Lems (Netherlands)

11:20 – 11:40  Connection between malabsorption and bone loss
Pal Miheller (Hungary)

12:00 – 13:00  National Day Lehár 1+2
Discussions & Networking
Sponsored by the Hungarian Society of Osteoporosis and Osteoarthrology

13:00 – 14:00  Lunch Break
This prestigious PhD Training Course, aimed at promoting general knowledge of bone research to young investigators, is now in its 13th Edition and has been hailed as one of the most innovative and successful courses in the bone field.

**Programme highlights**

*Full programme and speaker details are available from www.ectsoc.org*

- Intellectual property and plagiarism
- ER stress and bone
- Muscle and bone cross-talk
- Bone fragility: from basic research to clinical trial
- Bone metastases: basic and clinical overview
- Bone rare diseases: from the research to the patient
- Zebrafish models of bone diseases

**Workshops** on how to prepare a presentation.

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**ECTS PhD Training Course**

**7-10 September 2019 • ITALY**

**Venue:**
Camplus Guest Bononia
Bologna
Italy
www.camplusguest.it

**Course Co-Chairs:**
Nadia Rucci (Italy)
Luca Sangiorgi (Italy)
Nuria Guañabens (Spain)
Gudrun Stenbeck (UK)

Full programme & registration details can be found at [www.ectsoc.org/education/phd-training](http://www.ectsoc.org/education/phd-training)

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Rosemary Oduor
Email: rosemary.oduor@ectsoc.org
Tel: +32 471 78 4125

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ECTS
European Calcified Tissue Society

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@ECTSsoc
@ECTS_soc
www.ectsoc.org
14:00 – 16:00  National Day
Central and Eastern European Expert Meeting
Discussion of Osteoporosis Treatment Gap:
Country-Specific Expert Evaluations
Sponsored by the Hungarian Society of Osteoporosis
and Osteoarthrology
Chair: Edward Czerwinski (Poland)
Péter Lakatos (Hungary)

14:00 – 14:12 Country-Specific Expert Evaluations – Hungary
Csaba Horváth (Hungary)

14:12 – 14:24 Country-Specific Expert Evaluations – Austria
Gerold Holzer (Austria)

14:24 – 14:36 Country-Specific Expert Evaluations – Slovenia
Tomaz Kocjan (Slovenia)

14:36 – 14:48 Country-Specific Expert Evaluations – Poland
Edward Czerwinski (Poland)

14:48 – 15:00 Country-Specific Expert Evaluations – Slovakia
Martin Kužma (Slovakia)

15:00 – 15:12 Country-Specific Expert Evaluations – Czech Republic
Vladimir Palicka (Czech Republic)

15:12 – 15:24 Country-Specific Expert Evaluations – Bulgaria
Mihail Boyanov (Bulgaria)

11:30 – 13:00  ECTS – ICCBH Workshop on Rare Bone Diseases
Pathophysiology and Manifestations and Treatment
from Childhood to Adulthood
Chair: Nick Bishop (United Kingdom)
Outi Mäkitie (Finland)
Carola Zillikens (Netherlands)

11:30 – 12:00 The spectrum of skeletal dysplasias and diagnostic challenges
Uwe Kornak (Germany)

12:00 – 12:30 Model systems of skeletal fragility
Antonella Forlino (Italy)

12:30 – 13:00 Emerging new treatments for skeletal dysplasia
Melita Irving (United Kingdom)
Supported by educational grants from industry

13:00 – 14:00 Lunch Break
14:00 – 16:00  ECTS – ICCBH Workshop on Rare Bone Diseases
Pathophysiology and Manifestations and Treatment from Childhood to Adulthood
Brahms 1
Chair: Nick Bishop (United Kingdom)
Outi Mäkitie (Finland)
Carola Zillikens (Netherlands)

14:00 – 14:30 Multidisciplinary Management of patients with Rare Bone Disease
Klaus Mohnike (Germany)

14:30 – 15:00 Rare Bone Diseases – Transition from paediatric to adult care
Martine Cohen-Salal (France)

15:00 – 15:40 Presentations from Patient Groups

15:40 – 15:50 Mice lacking Plastin-3 display a specific defect of cortical bone acquisition
Timur Yorgan (Germany)

15:50 – 16:00 A novel LRP4 mutation in a middle-aged woman with widely distributed osteosclerosis
Yiming Feng (China)

Supported by educational grants from industry

14:00 – 16:00  Working Group 1: Animal Models
Liszt 1
Animal Models in Bone Research: Cancer Models, Transgenic Animal Models
Chair: Ulrike Baschant (Germany)
Ciro Menale (Italy)
Mattia Capulli (Italy)

14:00 – 14:30 Pre-clinical cancer models
Aymen Idris (United Kingdom)

14:30 – 15:00 Bone Histomorphometry in pre-clinical mouse models
Reinhold Erben (Austria)

15:00 – 15:30 Mouse Cre-Lines in Bone Research
Jan Tuckermann (Germany)

15:30 – 15:45 Development of CRISPR/Cas9-based dual-fluorescent reporter mouse models to study in vivo single cell mechanomics of osteoblasts and osteoclasts
Esther Wehrle (Switzerland)
14:00 – 16:00 Working Group 2: Rheumatic Diseases and Bone
Bone, Heart and Rheumatic Diseases
Chair: Willem Lems (Netherlands)

14:00 – 14:30 Basic interactions between bone and atherosclerotic vessels
Zoltan Szekanecz (Hungary)

14:30 – 15:00 Clinical interaction between bone and cardiovascular events
Hennie Raterman (Netherlands)

15:00 – 15:30 Refracture and mortality, competing risks after initial fracture
Piet Geusens (Netherlands)

15:30 – 15:40 Cardio-metabolic health and bone mineral density in
postmenopausal women: a Korean population–based study
Hoon Kim (Republic of Korea)

15:40 – 15:50 Male spontaneously hypertensive rats develop poor bone mass
and strength
Worachet Promruk (Thailand)

Supported by an educational grant from industry

14:00 – 16:00 Working Group 3: Bone Bioengineering, Regeneration
and Implants
Biomechanics of Pathological Bone Tissue and of the
Relevant Repair Strategies
Chair: Fabio Galbusera (Italy)

14:00 – 14:30 Biomechanics of the metastatically involved spine
Tito Bassani (Italy)

14:30 – 15:00 Biomechanical aspects of non-rigidity in lumbopelvic reconstruction
following total sacrectomy
Peter Eltes (Hungary)

15:00 – 15:30 Numerical simulation of the failure of pathological bone tissue
Mirit Sharabi (Israel)

15:30 – 15:45 Stress-shielding-induced bone loss following total hip arthroplasty
affects orientation of newly formed collagen in the proximal femur
Kilian Stockhausen (Germany)

15:45 – 16:00 The frequency of loading alters the bone healing response around
implants
Antonio Nanci (Canada)

16:00 – 16:30 Coffee Break
16:30 – 18:30  East Meets West Symposium
Mobility & Longevity
Chair:  Claus Glüer (Germany)
       Salvatore Minisola (Italy)

16:30 – 16:35 Welcome
       Salvatore Minisola (Italy)
       Claus Glüer (Germany)

16:35 – 17:00 Essential question to be addressed by research: Western perspective
       Steve Cummings (United States)

17:00 – 17:25 Essential question to be addressed by research: Eastern perspective
       Lin Chen (China)

17:25 – 17:40 Exemplifying research from China
       Weibo Xia (China)

17:40 – 17:55 Exemplifying research from Japan
       Yuuki Imai (Japan)

17:55 – 18:10 Exemplifying research from Korea
       Kwang Joon Kim (Republic of Korea)

18:10 – 18:25 Podium Discussion: Exiting perspectives for research

18:25 – 18:30 Summary

18:30  Closed session on future plans for developing the theme “Mobility and Longevity”
       Claus Glüer (Germany)
       Salvatore Minisola (Italy)

16:30 – 18:30  Working Group 4: Non-Mammalian Models
Fish Models of Rare Skeletal Disorders
Chair:  Leonor Cancela (Portugal)
       Antonella Forlino (Italy)

16:30 – 17:00 Modifier in the skeletal dysplasia of SHOX deficiency
       Gudrun Rappold (Germany)

17:00 – 17:30 Zebrafish a tool to dissect muscle-to-bone interaction
       David Karasik (Israel)

17:30 – 18:00 Modeling GACI and PXE in zebrafish
       Stefan Schulte-Merker (Germany)

18:00 – 18:10 Validation of GWAS-derived novel regulators of bone homeostasis
       Iryna Khrystoforova (Israel)
18:10 – 18:20  Marine plants as valuable sources of antioxidant and anabolic bone compounds
Vânia Palma Roberto (Portugal)

18:20 – 18:30  Characterising the interplay between inflammation and skeletal remodelling during fracture repair in zebrafish
Lucy McGowan (United Kingdom)

Supported by an educational grant from industry

16:30 – 18:30  Working Group 5: Osteoclasts
Novel Fundamental Insights by Translation from Genetic Disorders into Mouse Models and back
Chair: Jan Tuckermann (Germany)

16:30 – 16:55  Genetics of Osteopetrosis and Osteoclast Biology
Cristina Sobacchi (Italy)

16:55 – 17:20  Osteoclast fusion revisited – lessons from mouse models of SNX10 related osteopetrosis
Ari Elson (Israel)

17:20 – 17:45  New frontiers for osteopetrosis treatment -promising data from mouse models
Anna Teti (Italy)

17:45 – 18:10  Osteopetrosis, a tricky clinical problem
Ansgar Schulz (Germany)

18:10 – 18:17  Pleckstrin homology domain containing protein family member 1 (PLEKHM1) regulates bone resorption through sealing zone dynamics and lysosomal targeting in osteoclasts
Anh Tran (United Kingdom)

18:17 – 18:24  Biophysical analysis of novel disease-causing mutation of CLCN7 gene
Alessandra Picollo (Italy)

18:24 – 18:31  Comprehensive analysis of osteoclastogenic proteome reshaping reveals a novel regulator of osteoclast differentiation and function
Maria Materozzi (Italy)

16:30 – 18:30  Working Group 6: Rare Bone Diseases
Rare Disorders with Increased/Ectopic Bone Formation
Chair: Uwe Kornak (Germany)

16:30 – 17:00  Disorders with cranial hyperostosis
Gretl Hendrickx (Germany)
17:00 – 17:30  Focally sclerosing bone disorders
Lothar Seefried (Germany)

17:30 – 18:00  Clinical presentation and treatment of juvenile Paget disease
Corinna Grasemann (Germany)

18:00 – 18:30  Novel mechanistic aspects and treatment of fibrodysplasia ossificans progressiva (FOP)
Martina Rauner (Germany)

16:30 – 18:30  Working Group 7: Cancer and Bone Tumours
Lehár 3
Chair: Peyman Hadji (Germany)
Nadia Rucci (Italy)

16:30 – 17:15  Molecular mechanisms driving primary bone sarcomas
Dominique Heymann (United Kingdom)

17:15 – 18:00  Primary Bone Tumors – the surgeon’s point of view
Miklós Szendrői (Hungary)

18:00 – 18:15  Role of autophagy in the crosstalk between osteosarcoma and the bone microenvironment
Georges F. Carle (France)

18:15 – 18:30  Contribution of cancer stem cells to the metastatic capacities of osteosarcoma
Joelle Tchicaya Bouanga (France)

18:45 – 20:45  Next Generation Synergy Session
Lehár 1+2
Most Exciting Developments in the Musculoskeletal Field
Chair: Nicolas Bonnet (Switzerland)
Elena Tsourdi (Germany)

18:45 – 18:50  Welcome
Nicolas Bonnet (Switzerland)
Elena Tsourdi (Germany)

18:50 – 19:00  Next Gen networks in Europe – MuSkITyR (Germany)
Marietta Herrmann (Germany)

19:00 – 19:10  Next Gen networks in Europe – BRS (UK)
Elizabeth M Curtis (United Kingdom)

19:10 – 19:20  Next Gen networks in Europe – EMEUNET (EULAR) (Switzerland)
Felice Rivellese (United Kingdom)

19:20 – 19:45  KSBMR (Korean Society for Bone and Mineral Research)
A Ram Hong (Republic of Korea)
19:45 – 20:10  Chinese Society of Osteoporosis and Bone Mineral Research (CSOBMR) (China)
Hua Yue (China)

20:10 – 20:35  ECTS Academy
Abbas Jafari (Denmark)
Daniela Merlotti (Italy)

20:35 – 20:45  Discussion

18:45 – 20:45  Working Group 8: Cartilage Pathophysiology Liszt 1
Common and Rare Disorders of Cartilage
Chair: Antonio Rossi (Italy)

18:45 – 19:15  Developmental regulation of lysosome biogenesis, function and cellular identity in cartilage
Laura Cinque (Italy)

19:15 – 19:45  Phosphate transport-dependent and independent functions of PiT1 and PiT2 in cartilage growth plate biology
Laurent Beck (France)

19:45 – 20:15  Role of the sympathetic nervous system in osteoarthritis
Zsuzsa Jenei-Lanzl (Germany)

20:15 – 20:35  Parathyroid hormone treatment modulates cartilage quality
Patrick Ammann (Switzerland)

18:45 – 20:45  Working Group 9: Imaging Bone Strength: HR-pQCT Liszt 2
Chair: Andrew Burghardt (United States)

18:45 – 19:15  HR-pQCT in the prediction of fracture risk
Pawel Szulc (France)

19:15 – 19:45  HR-pQCT for monitoring bone strength
Bert van Rietbergen (Netherlands)

19:45 – 20:15  HR-pQCT in the assessment of rare bone disease
Florian Barvencik (Germany)

Supported by educational grants from industry

18:45 – 20:45  Working Group 10: Paget Disease of Bone Liszt 3
Chair: Stuart Ralston (United Kingdom)

18:45 – 19:15  Extended genome wide association and genome sequencing to discover new PDB loci
Omar Albagha (United Kingdom)
## Bone, Muscle & Beyond Webinar Series

The Webinar Series Bone, Muscle & Beyond is offered by ECTS. To register, please visit [www.ectsoc.org](http://www.ectsoc.org)

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Featuring</th>
<th>Moderated by</th>
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</thead>
<tbody>
<tr>
<td>30 May 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Energy Metabolism</td>
<td>Nicolas Bonnet</td>
<td>Nika Lovsin</td>
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<tr>
<td>27 June 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Bone- Muscle cross-talk under pathological conditions</td>
<td>Maria Luisa Bianchi</td>
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<tr>
<td>12 September 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Nerves &amp; Bone</td>
<td>Florent Elefteriou</td>
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<tr>
<td>17 October 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Fundamental and clinical aspects of Bone &amp; Cancer</td>
<td>Gabriel van der Pluijm &amp; Peyman Hadji</td>
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<tr>
<td>14 November 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Mechanotransduction of ECM-cell interactions</td>
<td>Dennis Discher</td>
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<tr>
<td>12 December 2019</td>
<td>16:00 - 17:00 CET</td>
<td>Treatments for osteoporosis</td>
<td>Bente Langdahl</td>
<td></td>
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</tbody>
</table>
19:15 – 19:45 Functional analysis of ZNF678 in PDB and giant cell tumour  
*Fernando Gianfrancesco (Italy)*

19:45 – 20:15 Guidelines for diagnosis and management of PDB and future directions for collaborative research  
*Núria Guanabens (Spain)*

20:15 – 20:30 Targeted inactivation of Rin3 increases trabecular bone mass in aged mice  
*Mahéva Vallet (United Kingdom)*

20:30 – 20:45 Investigating the functional role of the ZNF687 transcription factor in aggressive forms of Paget's disease of bone  
*Federica Scotto di Carlo (Italy)*

18:45 – 20:45 Working Group 11: Lehár 3  
**Epigenetic Regulation of Bone Formation and Homeostasis**  
**Non-Coding RNAs – Characterization of the State of the Art in Small and Long Non-Coding RNAs**  
*Chair: Andre van Wijnen (United States)*

18:45 – 19:15 Long non-coding RNAs in osteogenesis  
*Jane B. Lian (United States)*

19:15 – 19:45 Biological role of microRNAs in bone homeostasis  
*Jorma Antero Määttä (Finland)*

19:45 – 20:15 Epigenetic regulators of Heterochromatin during skeletogenesis  
*Andre van Wijnen (United States)*

20:15 – 20:30 Zebrafish crispants recapitulate BMD decrease observed in lrp5 KO, indicating they may be used for screening of BMD candidate genes  
*Chen Shochat (Israel)*

20:30 – 20:45 Effects of a ketogenic diet on the progression of osteoarthritis in obese mice  
*Maura Strigini (France)*
ECTS Congress 2019

Saturday, 11 May – Tuesday, 14 May 2019

Floor Plan
### Programme Overview

**Saturday, 11 May 2019**

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<tr>
<td>07:30</td>
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<tr>
<td>08:00</td>
<td>Welcome</td>
<td>Pàtria</td>
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<tr>
<td>08:30</td>
<td>Clinical Update 1</td>
<td>Bartók</td>
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<tr>
<td></td>
<td>Basic Science Update 1: Bone Biology</td>
<td>Poster Loft</td>
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<td>09:00</td>
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<td>09:30</td>
<td>Coffee Break / Industry Exhibition</td>
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<tr>
<td>10:00</td>
<td>Clinical Update 2</td>
<td>Pàtria</td>
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<td>Basic Science Update 2: Basic Science Technology</td>
<td>Bartók</td>
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<td>10:30</td>
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<tr>
<td>11:00</td>
<td>East Meets West Symposium</td>
<td>Pàtria</td>
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<td>Bartók</td>
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<td>12:00</td>
<td>Lunch Break / Poster Exhibition / Industry Exhibition</td>
<td>Poster Loft</td>
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<td>ECTS AGM</td>
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<td>13:30</td>
<td>Corporate Satellite Symposia</td>
<td>Bartók</td>
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<td>15:30</td>
<td>Coffee Break / Poster Exhibition / Industry Exhibition</td>
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<td>16:00</td>
<td>Opening Ceremony</td>
<td>Pàtria</td>
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<td>Plenary Symposium 1</td>
<td>Bartók</td>
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<td>WIN: What is New</td>
<td>Poster Loft</td>
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<td>17:00</td>
<td>Break</td>
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<tr>
<td>17:30</td>
<td>Steven Boonen Lecture</td>
<td>Pàtria</td>
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<td>Bartók</td>
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<td>18:00</td>
<td>ECTS/ASBMR Debate</td>
<td>Pàtria</td>
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<td>Bartók</td>
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<tr>
<td>19:00</td>
<td>Welcome Reception</td>
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<td>Bartók</td>
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<td>21:00</td>
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</tbody>
</table>
Scientific Programme

Saturday, 11 May 2019

08:00 – 08:30 Welcome
Welcome: President’s Address
Anna Teti (Italy)

08:30 – 10:00 Clinical Update 1
Chair: Christian Meier (Switzerland)
    Pawel Szulc (France)

08:30 – 09:00 The new anabolics – evidence and concerns
    Juliet Compston (United Kingdom)

09:00 – 09:30 Managing the patient after denosumab
    Bente Langdahl (Denmark)

09:30 – 10:00 Where are we going with vitamin D and bone health
    Carola Zillikens (Netherlands)

08:30 – 10:00 Basic Science Update 1: Bone Biology
Chair: Graziana Colaianni (Italy)
    Reinhold Erben (Austria)

08:30 – 09:00 Bone marrow adiposity
    Annegreet G. Veldhuis-Vlug (Netherlands)

09:00 – 09:30 Phosphate sensing
    Laurent Beck (France)

09:30 – 10:00 Chondrocyte osteoblast transition
    Christine Hartmann (Germany)

10:00 – 10:30 Coffee Break / Industry Exhibition
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<thead>
<tr>
<th>Time</th>
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<tr>
<td>10:30 – 11:30</td>
<td>Clinical Update 2</td>
<td>Pàtria</td>
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<td>Chair: Csaba Horváth (Hungary) Willem Lems (Netherlands)</td>
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<tr>
<td>10:30 – 11:00</td>
<td>Secondary Osteoporosis – Endocrine</td>
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<td>Andrea Palermo (Italy)</td>
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<tr>
<td>11:00 – 11:30</td>
<td>Secondary Osteoporosis – Other Causes</td>
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<td>Stuart Ralston (United Kingdom)</td>
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<tr>
<td>10:30 – 11:30</td>
<td>Basic Science Update 2: Basic Science Technology</td>
<td>Bartók</td>
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<td>Chair: Ulrike Baschant (Germany) Graham Williams (United Kingdom)</td>
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<tr>
<td>10:30 – 11:00</td>
<td>High-throughput, multi-image cryohistology of mineralized tissues</td>
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<td>David W. Rowe (United States)</td>
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<td>11:00 – 11:30</td>
<td>Two-photon microscopy to discover the mysterious world of bone</td>
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<td>Michelle McDonald (Australia)</td>
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<td>11:30 – 12:30</td>
<td>East Meets West Symposium</td>
<td>Pàtria</td>
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<td>Chair: Bo Abrahamsen (Denmark) Salvatore Minisola (Italy)</td>
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<td>11:30 – 11:45</td>
<td>Optimising drug dosing: Eastern perspective</td>
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<td>Yoshiya Tanaka (Japan)</td>
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<tr>
<td>11:45 – 12:00</td>
<td>Optimising drug dosing: Western perspective</td>
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<td>Erik Fink Eriksen (Norway)</td>
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<td>12:00 – 12:15</td>
<td>How to efficiently run a Fracture Liaison Service: Eastern perspective</td>
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<td>Yong-Chan Ha (Republic of Korea)</td>
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<td>12:15 – 12:30</td>
<td>How to efficiently run a Fracture Liaison Service: Western perspective</td>
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<td>Kristina Akesson (Sweden)</td>
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<td>12:30 – 13:30</td>
<td>Lunch Break / Poster Exhibition / Industry Exhibition</td>
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<tr>
<td>12:45 – 13:15</td>
<td>ECTS Annual General Meeting</td>
<td>Pàtria</td>
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</table>
13:30 – 15:00  Industry Sponsored Session

See page 146

15:00 – 15:30  Coffee Break / Poster Exhibition / Industry Exhibition

15:30 – 16:00  Opening Ceremony

Chair: Anna Teti (Italy)
István Takács (Hungary)

15:30 – 15:45  President’s Welcoming Remarks
Anna Teti (Italy)

15:45 – 16:00  Local Organising Committee Chair’s Welcoming Remarks
István Takács (Hungary)

16:00 – 17:00  Plenary Symposium 1

WIN: What is New
Chair: Timothy R Arnett (United Kingdom)
Judit Donáth (Hungary)
Marietta Herrmann (Germany)

16:00 – 16:30  Basic/Translational Update
Martina Rauner (Germany)

16:30 – 17:00  Clinical Update
Martine Cohen-Solal (France)

17:00 – 17:15  Break / Poster Exhibition / Industry Exhibition

17:15 – 17:45  Steven Boonen Lecture

Chair: Geert Carmeliet (Belgium)
Anna Teti (Italy)

17:15 – 17:45  Two billion years of evolution of vitamin D
Roger Bouillon (Belgium)
ECTS 2019
Final Programme
Saturday
11 May 2019

ECTS/ASBMR Debate
This House Believes that Intervention to Increase Peak Bone Mass rather than Targeting Bone Loss Would be More Effective in Reducing the Osteoporosis Fracture
Chair: Bo Abrahamsen (Denmark)
    Juliet Compston (United Kingdom)
    Anna Teti (Italy)

17:45 – 17:55 Introduction by the chairs and vote
17:55 – 18:10 Debate: For the motion
    Nicholas Harvey (United Kingdom)
18:10 – 18:25 Debate: Against the motion
    Benjamin Leder (United States)
18:25 – 18:35 Comments and questions from the audience
18:35 – 18:45 Rebuttal
    Nicholas Harvey (United Kingdom)
    Benjamin Leder (United States)
18:45 – 18:50 Vote
18:50 – 19:00 Debate closed
SAVE THE DATE!

14TH INTERNATIONAL CONFERENCE ON OSTEOGENESIS IMPERFECTA

OI2020

5-8 SEPTEMBER 2020

SHEFFIELD, UK

For further information contact

Nick Bishop (Sheffield, UK)
Local Organising Committee Chair
Email: iccbh@ectsoc.org
Website: www.iccbh.org

www.iccbh.org
Scientific Programme

Sunday, 12 May 2019

**Workshop 1: Clinical/Public Health**
*From Fetus to Old Age*
*Chair: Ling Oei (Netherlands)*
*Zsuzsanna Valkusz (Hungary)*

- **08:00 – 09:00**
  - A lifecourse approach to osteoporosis. Fetal, placental and early life factors
  - *Jonathan Tobias (United Kingdom)*

- **08:30 – 09:00**
  - The fascinating process of growth plate chondrogenesis and its clinical implications
  - *Ola Nilsson (Sweden)*

**Workshop 1: Basic/Translational**
*Communication between Cells and Bone Environment*
*Chair: Christine Hartmann (Germany)*
*Bram van der Eerden (Netherlands)*

- **08:00 – 08:30**
  - Function of blood vessel and vascular niches in bone
  - *Saravana Ramasamy (United Kingdom)*

- **08:30 – 09:00**
  - Targeting skeletal endothelium to counteract bone loss
  - *Matthew Greenblatt (United States)*

**Concurrent Oral Presentations 1 – Clinical/Public Health: Pàtria**
*Rare Bone Diseases and Early Onset Osteoporosis*
*Chair: Pál Géher (Hungary)*
*Fernando Gianfrancesco (Italy)*

- **09:05 – 09:12**
  - Persistent and recurrent cases in tumor-induced osteomalacia: a retrospective study
  - *Xiang Li (China)*

- **09:15 – 09:22**
  - Biomarker profiles in PLS3 and WNT1 osteoporosis – elevated serum DKK1 in abnormal PLS3 function
  - *Riikka Mäkitie (Finland)*

- **09:25 – 09:32**
  - The relationship of radiographic rickets severity score with clinical outcomes in children with X-linked hypophosphatemia
  - *Tom Thacher (United States)*
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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenters</th>
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<tr>
<td>09:35 – 09:42</td>
<td>Early onset osteoporosis due to heterozygous ENPP1 loss of function mutations in humans is recapitulated by homozygous ENPP1 loss of function mutations in mice</td>
<td>Demetrios Braddock (United States)</td>
</tr>
<tr>
<td>09:45 – 09:52</td>
<td>Exome sequencing with functional follow-up identifies KIF26B as a novel genetic determinant of familial osteoporosis</td>
<td>Melissa M. Formosa (Malta)</td>
</tr>
<tr>
<td>09:55 – 10:02</td>
<td>Blood as a proxy for bone tissue – An epigenome-wide pilot study in bone-blood pairs</td>
<td>Parvaneh Ebrahimi (Sweden)</td>
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<tr>
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<td><strong>Concurrent Oral Presentations 1 – Basic/Translational:</strong> Bartók Osteoblasts and Bone Formation</td>
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<tr>
<td>09:05 – 09:12</td>
<td>The bone anabolic effect of Wnt1 is quickly reversed</td>
<td>Julia Luther (Germany)</td>
</tr>
<tr>
<td>09:15 – 09:22</td>
<td>Altered lipid/cholesterol metabolism in mesenchymal stromal cells following low-serum adaptation accelerates osteogenesis in vitro and in vivo by modifying secretome compartments</td>
<td>Alasdair Kay (United Kingdom)</td>
</tr>
<tr>
<td>09:25 – 09:32</td>
<td>Deletion of PKA regulatory subunit 1A in osteoblasts causes dramatic bone turnover with an expansion of trabecular area at the expense of cortical bone</td>
<td>Carole Le Henaff (United States)</td>
</tr>
<tr>
<td>09:35 – 09:42</td>
<td>FGFR3: a key regulator of zebrafish cranial vault development</td>
<td>Emilie Dambroise (France)</td>
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<tr>
<td>09:45 – 09:52</td>
<td>Osteoblast lineage-specific deletion of PDGFR signaling potentiates the bone anabolic effect of anti-sclerostin antibody treatment in mice</td>
<td>Cyril Thouverey (Switzerland)</td>
</tr>
<tr>
<td>09:55 – 10:02</td>
<td>Role of Dlx5 and Dlx6 in the commitment of osteoblastic differentiation: application to osteoporosis</td>
<td>Camille Blandin (France)</td>
</tr>
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</table>
10:10 – 10:30  **Poster SNAPs Presentations 1 – Clinical / Public Health**  
*Chair: Pál Géher (Hungary)*  
*Fernando Gianfrancesco (Italy)*

– 1 minute presentation; no discussion –

**P017**  
Sex steroids as determinants of Wnt-Signalling markers in men  
*Thiberiu Banica (Belgium)*

**P044**  
Microcracks in subchondral bone plate is associated with cartilage preservation  
*Mylène Zarka (France)*

**P060**  
Bone health index for the assessment of pediatric fracture risk  
*Olja Grgic (Netherlands)*

**P077**  
Myeloma-specific oncolytic adenovirus induces significant tumour oncolysis in vitro and in vivo and prevents cell line regrowth  
*Georgia Stewart (United Kingdom)*

**P080**  
Changes in trabecular bone score and bone mineral density following allogeneic hematopoietic stem cell transplantation  
*Yejee Lim (Republic of Korea)*

**P163**  
Bone characteristics in elderly men with hypolactasia  
*Christoph Haudum (Austria)*

**P179**  
Identification of novel predisposing mutations in familial Paget’s disease of bone  
*Maria Materozzi (Italy)*

**P327**  
COL1A1 C-propeptide mutations affect procollagen ER localization and reduce C-terminal procollagen processing  
*Joan Marini (United States)*

**P326**  
Interfamilial diversity in patients with collagen-related osteogenesis imperfecta  
*Lidiia Zhytnik (Estonia)*

**P338**  
The design of a long-acting PTH (TransCon PTH) phase 2 trial in patients with hypoparathyroidism, based on phase 1 results in healthy subjects  
*David B. Karpf (United States)*
10:10 – 10:30  **Poster SNAPs Presentations 1 – Basic / Translational**  
*Chair: Natalie C Butterfield (United Kingdom)*  
*Antonella Forlino (Italy)*  

– 1 minute presentation; no discussion –

**P031**  
Osteoblast-derived extracellular vesicles drive mineral nucleation in stem cell cultures  
*Owen Davies (United Kingdom)*

**P043**  
A novel algorithm to predict bone changes based on physiological loading in a preclinical murine model  
*Vee San Cheong (United Kingdom)*

**P076**  
Osteosarcoma cell-derived exosomes affect tumor microenvironment by specific packaging of microRNAs  
*Lavinia Raimondi (Italy)*

**P103**  
hMSC-TERTSCAS9: a versatile tool to study osteoblast gene function  
*Jeroen van de Peppel (Netherlands)*

**P104**  
Syndecan-1 deficiency influences bone cell communication in vivo and in vitro in Mice  
*Melanie Timmen (Germany)*

**P119**  
Macrophage-derived thymidine phosphorylase promotes osteoclastogenesis and bone resorption in inflammatory osteolysis  
*Gen Matsumae (Japan)*

**P120**  
miR-342-3p regulates the generation of osteoclasts  
*Florence Apparailly (France)*

**P125**  
Relationship between the fluid flow pattern through the lacunocanalicular network and adaptive mechano-response in mouse tibia  
*Alexander van Tol (Germany)*

**P134**  
Endogenous Lin28a protects osteoarthritic cartilage breakdown through HMGA2 expression  
*Yohan Jouan (France)*

10:30 – 11:00  **Coffee Break / Poster Exhibition / Industry Exhibition**
11:00 – 12:00  **Plenary Symposium 2:**
**Insights from Outside: Cancer Dormancy**
*Chair: Nadia Rucci (Italy)  
  Hanna Taipaleenmaeki (Germany)*

11:00 – 11:30  Mechanisms governing metastatic dormancy
*Juergen Dittmer (Germany)*

11:30 – 12:00  Clinical impact of bone targeted agents on cancer cell dormancy in breast cancer
*Caroline Wilson (United Kingdom)*

12:00 – 13:30  Lunch Break / Poster Exhibition / Industry Exhibition

12:30 – 13:30  **Poster Focus 1**

– 5 minutes presentation + 5 minutes discussion –

12:30 – 12:35  Microtomographic assessment of bone quality in murine joints affected by psoriasis arthritis
*Felix N. Schmidt (Germany)*

12:40 – 12:45  Defective O-glycosylation of FGF23 in a Chinese hyperphosphatemic familial tumoral calcinosis patient
*Chang Liu (China)*

12:50 – 12:55  Towards a nutraceutical-based complementary medicine in bone health: cruciferous vegetables extracts and derivates induce osteogenic differentiation of human mesenchymal stromal cells
*Francesco Grassi (Italy)*

13:00 – 13:05  Progressive, immobilizing osteoporosis in a 11 year old, male, identical twin – an (unsolved) case report
*Mirko Rehberg (Germany)*

*Izabella Gomez (Hungary)*

13:20 – 13:25  Short-term teriparatide treatment effect in patients with severe osteoporosis
*Min Hyung Jung (Republic of Korea)*
12:40 – 12:50  **ECTS Named Awards Ceremony**

**Awardee Wall**

2019 ECTS Philippe Border Clinical Award: 
*Christian Meier (Switzerland)*

2019 ECTS Ian T Boyle Award: 
*Björn Busse (Germany)*

2019 ECTS Mike Horton Award: 
*Miep Helfrich (United Kingdom)*

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13:30 – 14:30  **Expert Forum**

**Pàtria**

**Expert View: XLH: A Bone or Musculoskeletal / Metabolic Disorder?**

*Chair: Martine Cohen-Solal (France)*

*Corinna Grasemann (Germany)*

13:30 – 14:00  XLH – An inherited bone disease

*Signe Beck-Nielsen (Denmark)*

14:00 – 14:30  XLH – A multifaceted metabolic disorder

*Peter Kamenicky (France)*

*Supported by an educational grant from industry*

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13:30 – 14:30  **Allied Health Professionals**

**Lehár 1+2**

*Chair: Margaret Paggiosi (United Kingdom)*

*Mette Rothmann (Denmark)*

13:30 – 13:50  Atypical Femur Fractures: causes, management and prevention

*Bo Abrahamsen (Denmark)*

13:50 – 14:00  Clinical effectiveness and safety of Denosumab in ESRF patients on dialysis: a systematic review

*Asad Ullah (United Kingdom)*

14:00 – 14:10  Zoledronate, but not solely calcium and vitamin D, can prevent the accelerated periprosthetic bone loss after total hip arthroplasty in patients with low systematic BMD

*Guangtao Fu (China)*

14:10 – 14:30  Treating osteoporosis – What’s new?

*Barbara Obermayer-Pietsch (Austria)*
13:30 – 14:30  Meet the Expert 1 – Clinical/Public Health
Real World Epidemiology for the Bone Researcher
Daniel Prieto-Alhambra (United Kingdom)

13:30 – 14:30  Meet the Expert 2 – Clinical/Public Health
How to Efficiently Run a Fracture Liaison Service
Kristina Akesson (Sweden)
Yong-Chan Ha (Republic of Korea)

13:30 – 14:30  Meet the Expert 3 – Clinical/Public Health
Optimising Drug Dosing
Erik Fink Eriksen (Norway)
Yoshiya Tanaka (Japan)

13:30 – 14:30  Meet the Expert 4 – Basic/Translational
High-Throughput, Multi-Image Cryohistology of Mineralized Tissues
David W. Rowe (United States)

13:30 – 14:30  Meet the Expert 5 – Basic/Translational
How to Evaluate Mesenchymal Stem Cell Function
Matthew Greenblatt (United States)

14:45 – 16:15  Industry Sponsored Session
See page 148

16:15 – 16:45  Coffee Break / Poster Exhibition / Industry Exhibition
Advancing the mechanistic understanding of human development and disease

We warmly invite submission of high-quality, primary data that support or challenge our understanding of:

• Developmental Biology
• Stem Cells
• Tissue Engineering

Ryan Gilbert, Ph.D.
Associate Professor, Biomedical Engineering
Rensselaer Polytechnic Institute (RPI), Troy, NY

Guojun Sheng, Ph.D.
Professor, International Research Center for Medical Sciences (IRCMS)
Kumamoto University, Japan

Christoph Viebahn, M.D.
Professor, Anatomy and Embryology
University of Göttingen, Germany

Submission
www.karger.com/cto
16:45 – 17:45  **Plenary Oral Presentations 1:**
**Rare Musculoskeletal Diseases**
*Chair: Csaba Kiss (Hungary)*
*Uwe Kornak (Germany)*

– 7 minutes presentation + 3 minutes discussion –

16:45 – 16:52  **PLO01**
A rare mutation in SMAD9 associated with high bone mass identifies the BMP signalling pathway as a potential osteo-anabolic target for osteoporosis
*Celia Gregson (United Kingdom)*

16:55 – 17:02  **PLO02**
Therapeutic targeting of ER exit site engulfment by lysosomes in osteogenesis imperfecta
*Sergey Leikin (United States)*

17:05 – 17:12  **PLO03**
Role of Lipocalin-2 in muscle failure-induced bone loss in the MDX mouse model of duchenne muscle dystrophy
*Marco Ponzetti (Italy)*

17:15 – 17:22  **PLO04**
Burosumab showed greater improvement in phosphate metabolism, rickets, and bowing than continuation with conventional therapy in children with X-linked hypophosphatemia (XLH)
*Ola Nilsson (Sweden)*

17:25 – 17:32  **PLO05**
Global natural history studies of generalized Arterial Calcification of Infancy (GACI) and Autosomal Recessive Hypophosphatemic Rickets type 2 (ARHR2) due to ENPP1 or ABCC6 deficiencies
*Frank Rutsch (Germany)*

17:35 – 17:42  **PLO06**
The iron-sensing receptor Tfr2 regulates osteoclastogenesis and the differentiation ability of hematopoietic stem cells
*Ulrike Baschant (Germany)*

17:45 – 18:00  **Break / Poster Exhibition / Industry Exhibition**

18:00 – 19:00  **Concurrent Oral Poster Presentations 1:**
**Clinical /Public Health**
*Chair: Xavier Nogués (Spain)*
*Barbara Obermayer-Pietsch (Austria)*

– 3 minutes presentation + 2 minutes discussion –

18:00 – 18:03  **P003**
The effect of vitamin D supplementation on its metabolism in a randomized controlled trial
*Stan Ursem (Netherlands)*
18:05 – 18:08  Low bone turnover is associated with functional hypoparathyroidism in type 2 diabetes  
*Janina Vavanikunnel (Switzerland)*

18:10 – 18:13  The association between osteocalcin, adiposity and bone health: results from a population based cohort  
*Katerina Trajanoska (Netherlands)*

18:15 – 18:18  Alterations of bone geometry, bone volumetric density, and microarchitecture but not areal bone mineral density in Chinese patients with primary hypertrophic osteoarthropathy  
*Yuping Xu (China)*

18:20 – 18:23  Secondary dislocation of distal radius fractures is associated with lower total and cortical volumetric bone mineral density and lower cortical thickness at the distal radius  
*Anne Marjan Daniels (Netherlands)*

18:25 – 18:28  A ‘NGS-digital PCR’ method gives new evidences on the molecular mechanism responsible for osteochondromas’ growth in mo disease  
*Elena Pedrini (Italy)*

18:30 – 18:33  Changes in bone marrow adipose tissue one year after Roux-en-Y gastric bypass: a prospective cohort study  
*Erik Fink Eriksen (Norway)*

18:35 – 18:38  Maternal vitamin D status in 2nd and 3rd trimester and offspring bone mass at age 8-9 years: an observational study  
*Astrid Kamilla Stunes (Norway)*

18:40 – 18:43  Functional assays of two non-coding variants in WNT16  
*Núria Martínez-Gil (Spain)*

18:45 – 18:48  Genome-wide association study identifies one novel locus associated with thickness and mineralization of metacarpal bones  
*Olja Grgic (Netherlands)*

18:50 – 18:53  Variants within the ZNF384 and COL1A1 genes influence bone mineral density and fracture risk in maltese postmenopausal women  
*Melissa M. Formosa (Malta)*

18:55 – 18:58  Birthweight, limb muscle mass and abdominal adiposity in middle age: findings from the UK biobank imaging enhancement  
*Elizabeth M Curtis (United Kingdom)*
18:00 – 19:00 Concurrent Oral Poster Presentations 1: Basic / Translational

Chair: Ilaria Roato (Italy)
Teun de Vries (Netherlands)

– 3 minutes presentation + 2 minutes discussion –

18:00 – 18:03 Extracellular vesicle protein and miRNA cargo reflect functional heterogeneity of mesenchymal stromal cells
Andrew Stone (United Kingdom)
P030

18:05 – 18:08 Differential response of trabecular and cortical bone following recovery from microgravity – induced bone loss
Katharina Jähn (Germany)
P039

18:10 – 18:13 Novel role of syndecan 3 in regulating osteoblastogenesis through the wnt signalling pathway
Andrew Butcher (United Kingdom)
P058

18:15 – 18:18 Cortical shell thickness in thoracic vertebrae is age- and region-dependent
Annika vom Scheidt (Germany)
P040

18:20 – 18:23 Delayed bone healing in HFD-induced obesity model: evidence for impaired differentiation capacity of osteoblasts and osteoclasts progenitors
Florence Figeac (Denmark)
P056

18:25 – 18:28 Glucocorticoid receptor dimerization is deleterious in trauma-induced compromised fracture healing
Yasmine Hachemi (Germany)
P057

18:30 – 18:33 Metastatic breast cancer burden is reduced in a Tgif1-deficient bone microenvironment
Marie-Therese Haider (Germany)
P074

18:35 – 18:38 New mouse model for atypical type VI osteogenesis imperfecta caused by IFITM5 S40L mutation
Joan Marini (United States)
P321

18:40 – 18:43 Development of lentiviral vector gene therapy for the treatment of autosomal recessive osteopetrosis
Sara Penna (Italy)
P322

18:45 – 18:48 Enzyme replacement therapy corrects bone remodeling pathologies, but not chondrocyte pathologies, in a mouse model for mucopolysaccharidosis type VI (MPS-VI)
Gretl Hendrickx (Germany)
P324

18:50 – 18:53 Mutations in the neuroblastoma amplified sequence (NBAS) gene in acrofrontofacionasal dysostosis type 1
Eleonora Palagano (Italy)
P323
19:00 – 20:00  **NI Mentoring Session**

*Chair: Hermann Agis (Austria)*

This is an interactive session giving the New Investigators an opportunity to discuss various topics with the leaders in the field: 
Interactive, round table discussion (3x15 min). Light snacks and beverages will be provided.

How to get a grant  
* Duncan Bassett (United Kingdom)  

How to publish  
* Christa Maes (Belgium)  

How to start a spin-off  
* Johannes Grillari (Austria)  

How to image  
* Michelle McDonald (Australia)  

How to transition to independence  
* Andrea Burden (Switzerland)  

How to balance life and work  
* Carola Zillikens (Netherlands)  

How to work in Industry  
* Nicolas Bonnet (Switzerland)  

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19:00 – 20:00  **Educational Symposium 1: Brahms 1**

**ENPP1: From Bench to Clinic – Advancements in Understanding ENPP1 Deficiency Disease**

*Chair: Leonor Cancela (Portugal)*

**Uwe Kornak (Germany)**

19:00 – 19:10  ENPP1 Deficiency manifesting as Generalized Arterial Calcification of Infancy (GACI) and Autosomal recessive hypophosphatemic rickets type 2 (ARHR2)

* Frank Rutsch (Germany)  

19:10 – 19:20  ENPP1 Deficiency in animal models: zebrafish and mouse

* Stefan Schulte-Merker (Germany)  

19:20 – 19:30  Case Report – ENPP1 Deficiency

* Ralf Oheim (Germany)  

19:30 – 19:40  Treatment options and initial experience with Enzyme Replacement Therapy in GACI and ARHR2

* Demetrios Braddock (United States)  

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19:40 – 20:00  Faculty Discussion

Supported by an educational grant from industry

Light snacks and beverages will be provided as part of a small reception after the scientific part of the session.

19:00 – 20:00  AHP Networking  

Poster Loft

Chair: Margaret Paggiosi (United Kingdom) 
Mette Rothmann (Denmark)

19:10 – 19:15  Biocompatibility and osteogenic potential of calcium phosphate for cleft palate repair
P015  
Mehdi Alrubayee (United Kingdom)

19:15 – 19:20  Diabetes Mellitus: a synonym to functional hypoparathyroidism
P142  
Amit Saraf (India)

P143  
Sangbong Ko (Republic of Korea)

19:25 – 19:30  Normocalcaemic hypoparathyroidism: study of the prevalence and natural history in a United Kingdom referral population
P145  
Marian Schini (United Kingdom)

19:30 – 19:35  Prevalence of modifiable and non modifiable risk factors of osteoporosis in health care workers of < 40 years at tertiary health center of remote India
P246  
Amit Saraf (India)

Light snacks and beverages will be provided.

20:00 – 21:30  ECTS 2019 Partners Forum  

Liszt 1

Welcome & Introduction of new ECTS Academy Members
The Future of BioMedical Education
Discussions
Networking

Light snacks and beverages will be provided
New Interactive App Features this year at the ECTS 2019 Congress!

Ask a question
This in-app function allows you to simply send in your questions during selected sessions using the app.

Rating
This new function enables you to rate your session by only one simple click through the app.

Chat
You can now chat and connect with other attendees to form valuable connections at the congress.

How to download:
The easiest way to download our mobile app is to scan one of these barcodes.

You can also search for ‘ECTS’ in the Apple App Store or Google Play Store.

After downloading the app, don’t forget to enable push notifications to stay up-to-date on the latest happenings and important news!

www.ects2019.org
## Programme Overview

### Monday, 13 May 2019

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**Legend:**
- Clinical/Public Health
- Basic/Translational
- Industry Sponsored Sessions
- Clinical & Basic
- ECTS Events
- New Investigators
- AHP Sessions
- General Networking
Monday 13 May 2019

**Workshop 2:**
- 08:00: Osteoporosis Treatment
- 08:30: Molecular Biology of Fracture Healing

**Concurrent Oral Presentations 2**
- 09:00: Clinical/Public Health
- 09:30: Basic/Translational

**Poster SNAPs 2**
- 10:15: Excellence in Research Award Ceremony

**Plenary Symposium 3:** Bone Quality and Fragility
- 11:00: MtE 6: Bioengineering of Articular Cartilage
- 11:30: MtE 7: Bone Imaging Beyond DXA
- 11:45: MtE 8: Biomechanical Characterization of the Bone Matrix in Health and Disease
- 12:00: MtE 9: Metabolism of Osteoblasts/Skeletal Cells
- 13:00: MtE 10: Translating research from the Bone Clinic to the Laboratory and back again

**Coffee Break / Poster Exhibition / Industry Exhibition**
- 10:30
- 11:30
- 12:30
- 13:30
- 14:30
- 15:30
- 16:30
- 17:30

**Plenary Oral Presentations 2:** Bone Pathophysiology
- 16:45: MtE 7: Bone Imaging Beyond DXA
- 17:15: MtE 8: Biomechanical Characterization of the Bone Matrix in Health and Disease
- 17:45: MtE 9: Metabolism of Osteoblasts/Skeletal Cells
- 18:00: MtE 10: Translating research from the Bone Clinic to the Laboratory and back again

**Coffee Break / Poster Exhibition / Industry Exhibition**
- 12:00
- 13:00
- 14:00
- 15:00
- 16:00
- 17:00
- 18:00
- 19:00

**Poster Focus 2**
- 13:00: ECTS Fellowship Ceremony at Awardee Wall
Scientific Programme

Monday, 13 May 2019

08:00 – 09:00  **Workshop 2: Clinical/Public Health**  
**Osteoporosis Treatment**  
*Chair: Jean Jacques Body (Belgium)*  
*Zsolt Nagy (Hungary)*

- 08:00 – 08:30  **Imminent risk after prior fracture**  
*Serge Ferrari (Switzerland)*

- 08:30 – 09:00  **Imminent risk other than prior fracture**  
*Anna Nilsson (Sweden)*

08:00 – 09:00  **Workshop 2: Basic/Translational**  
**Molecular Biology of Fracture Healing**  
*Chair: Clemens Bergwitz (United States)*  
*Mattia Capulli (Italy)*

- 08:00 – 08:30  **Regulation of fracture healing by inflammatory pathways**  
*Anita Ignatius (Germany)*

- 08:30 – 09:00  **Periosteal stem cells define the regenerative potential for fracture healing**  
*Celine Colnot (France)*

09:05 – 10:05  **Concurrent Oral Presentations 2 – Clinical/Public Health:**  
**Osteoporosis and Risk Predictors**  
*Chair: Elizabeth M Curtis (United Kingdom)*  
*Péter Somogyi (Hungary)*  

- 09:05 – 09:12  **A machine learning approach to predict non-vertebral fracture risk from dual X-ray absorptiometry images**  
*Tilen Kranjc (Netherlands)*

- 09:15 – 09:22  **Does screening for high hip fracture risk impact on falls risk? A post hoc analysis from the SCOOP study**  
*Eugen McCloskey (United Kingdom)*

- 09:25 – 09:32  **T-score as an Indicator of fracture risk on therapy: evidence from romosozumab vs alendronate treatment in the ARCH trial**  
*Cesar Libanati (Belgium)*
09:35 – 09:42  Added value of bone biopsy in the assessment of skeletal status within a year of renal transplantation?
Nathalie Bravenboer (Netherlands)

09:45 – 09:52  Fracture risk assessment in women treated with aromatase inhibitors: effect of oral bisphosphonates
Xavier Nogués (Spain)

09:55 – 10:02  Genome-wide association meta-analysis identifies four loci for osteocalcin levels
Katerina Trajanoska (Netherlands)

09:05 – 10:05  Concurrent Oral Presentations 2 – Basic/Translational: Bartók
Local and Systemic Regulators of Bone Turnover
Chair: Miep Helfrich (United Kingdom)
Ciro Menale (Italy)
– 7 minutes presentation + 3 minutes discussion –

09:05 – 09:12  Loss of mechanosensitivity in a mouse model for gerodermia osteodysplastica due to an altered lacuno-canalicular osteocyte network
Uwe Kornak (Germany)

09:15 – 09:22  Weekly shifts in light-dark cycle disrupt circadian clock gene expression in bone and reduce bone turnover
Elizabeth Winter (Netherlands)

09:25 – 09:32  The microbiome plays a crucial role in mediating negative effects of chronic psychosocial stress on bone growth
Melanie Haffner-Luntzer (Germany)

09:35 – 09:42  Role of matricellular protein periostin (Postn) on bone fragility in two models of type 2 diabetes
Nicolas Bonnet (Switzerland)

09:45 – 09:52  Evidence that the intestinal microbiome regulates susceptibility to osteoarthritis in mice
Antonia Sophocleous (Cyprus)

09:55 – 10:02  Skeletal muscle-specific ablation of Slc20a1/Pit1 and Slc20a2/Pit2 causes early postnatal lethality in mice
Clemens Bergwitz (United States)
10:10 – 10:30  Poster SNAPs Presentations 2 – Clinical / Public Health

Chair: Elizabeth M Curtis (United Kingdom)  
Péter Somogyi (Hungary)

– 1 minute presentation; no discussion –

P194  Mutations in osteoarthritis susceptibility genes cause joint shape variation detectable at larval stages in zebrafish
Erika Kague (United Kingdom)

P238  Trabecular bone score (TBS) and life expectancy (LE) with and without osteoporotic fracture
Enisa Shevroja (Switzerland)

P239  Peripheral trabecular bone microarchitecture is impaired in postmenopausal non-osteoporotic women with fragility fracture-the ChiVOS case-control study
Ning Jiang (China)

P263  The accuracy of self-reported fractures among a Belgian cohort of postmenopausal women: the FRISBEE study
Felicia Baleanu (Belgium)

P262  Incidence of osteoporotic refractures and associated mortality in Korea using nationwide claims data
Yong-Chan Ha (Republic of Korea)

P264  Clinical risk factors (CRFs) for osteoporotic fractures (OFs) are function of the fracture site: data from the FRISBEE study
Laura Iconaru (Belgium)

P285  Motivations for eight years adherence to alendronate therapy
Jessica Pepe (Italy)

P293  Differentiation and functional activity of osteoclasts are impaired in CFTR-f508DEL patients
Marie-Laure Jourdain (France)

P306  Hypophosphatemic osteomalacia induced by long-term low-dose adefovir Dipivoxil: clinical characteristics of 140 cases
Jiao Zhao (China)

P314  Effects of zoledronic acid on vertebral shape of children and adolescents with osteogenesis imperfecta
Lujiao Li (China)
10:10 – 10:30  Poster SNAPs Presentations 2 – Basic / Translational  
Chair: Miep Helfrich (United Kingdom)  
          Ciro Menale (Italy)

- 1 minute presentation; no discussion -

P139  The thyroid hormone transporter Mct8 is a negative regulator of 
       trabecular bone mass in male mice  
       Franziska Lademann (Germany)

P140  Anti-Müllerian Hormone deficiency: a new mouse model for bone 
       changes following natural menopause?  
       Christiane van As (Netherlands)

P178  MiR-146a a key Player in bone metabolism  
       Victoria Saferding (Germany)

P193  New role for RANKL as a proinflammatory modulator in modeled 
       inflammatory arthritis  
       Eleni Douni (Greece)

P202  Tissue specific effects of glucocorticoids suggest inter-organ 
       communication during fin regeneration  
       Franziska Knopf (Germany)

P208  Longitudinal evaluation of the musculoskeletal and frailty 
       phenotype in a mouse model of accelerated aging  
       Ariane C. Scheuren (Switzerland)

P291  Humanin might protect against glucocorticoid induced osteoporosis 
       in a mouse model of Duchenne muscular dystrophy  
       Therése Cedervall (Sweden)

P292  Hepcidin-resistant ferroportin mutation causes low bone mass in 
       mice  
       Maria G. Ledesma-Colunga (Germany)

P305  Irisin in post-menopausal women with primary hyperparathyroidism: 
       an interplay between Irisin and PTH  
       Andrea Palermo (Italy)

P325  Chronic recurrent multifocal osteomyelitis in children with 
       hypophosphatasia explained by anti-inflammatory nucleotidase 
       activity of tissue nonspecific alkaline phosphatase  
       David Magne (France)

10:30 – 11:00  Coffee Break / Poster Exhibition / Industry Exhibition
10:50 – 11:00  Excellence in Research Award

Excellence in Research Award:
*Klaus Engelke (Germany)*
*Presented by Anna Teti (Italy)*

11:00 – 12:00  Plenary Symposium 3: Bone Quality and Fragility

Chair: Péter Lakatos (Hungary)
  Barbara Obermayer-Pietsch (Austria)

11:00 – 11:30  Significance of bone quality as determinant of bone fragility

*Philipp Thurner (Austria)*

11:30 – 12:00  What do QCT and HRpQCT add to DXA for the assessment of bone fragility and bone quality of patients?

*Klaus Engelke (Germany)*

12:00 – 13:30  Lunch Break / Poster Exhibition / Industry Exhibition

12:30 – 13:30  Poster Focus 2

– 5 minutes presentation + 5 minutes discussion –

12:30 – 12:35  Dissecting the role of CXCR4 in breast cancer cell-bone microenvironment interaction

*Mattia Capulli (Italy)*

12:40 – 12:45  Diagnostic accuracy of a novel TRAP5b assay in diagnosing renal osteodystrophy

*Syazrah Salam (United Kingdom)*

12:50 – 12:55  Dynamic deformation by fluid flow on hematopoietic progenitor cells alters osteoclast differentiation

*Cornelia Bratengeier (Sweden)*

13:00 – 13:05  SOST polymorphisms are associated with lean mass in Chinese male offspring

*Luyue Qi (China)*

13:10 – 13:15  Skeletal maturation in relation to ethnic background in children of school age

*Olja Grgic (Netherlands)*


*Olja Grgic (Netherlands)*
Dear Colleagues

The year 2019 will mark 50 years since the first publications on the biological effects of the bisphosphonates. Since then more than 27,000 papers have appeared on PubMed! We invite you to join us in Sheffield as we celebrate this golden anniversary. The meeting will review developments over the past 50 years, discuss our current understanding and look at what the future may hold.

The discovery that bisphosphonates could inhibit bone resorption led very quickly to their clinical use in Paget’s disease and in patients with skeletal complications of cancer and later in osteoporosis. They remain the major drugs used for these conditions and their use in clinical therapeutics is likely to continue well into the future.

Sheffield is England’s 5th largest city, and with its two universities has been voted the UK’s most popular student destination. It has a vibrant and diverse social scene, and at the same time is one of the UK’s greenest cities, with one third of the city lying within the Peak District National Park. Transport links are good and there is a choice of international airports within an hour of the city.

We hope to welcome you to Sheffield in July

Richard Eastell & Graham Russell (Meeting Chairs)

Register now at www.bisphosphonates2019.org

For more information contact Janet Crompton, Meeting Organiser, info@bisphosphonates2019.org
13:00 – 13:10 **ECTS Fellowship Ceremony**

ECTS Fellowship – Clinical:
*Elena Tsourdi (Germany)*

ECTS Fellowship – Basic:
*Valentina Capo (Italy)*

13:30 – 14:30 **Educational Symposium 2**

**FGF23 – A Phosphotropic Hormone and Beyond**

*Chair: Alison Boyce (United States)*
*Outi Mäkitie (Finland)*

13:30 – 14:00 **FGF23-induced hypophosphatemias**
*Reinhold Erben (Austria)*

14:00 – 14:30 **FGF23 effects beyond phosphate homeostasis**
*Christian Faul (United States)*

*Supported by an educational grant from industry*

13:30 – 14:30 **ECTS-IFMRS Session: Big Data’s Secret**

*Lehár 1+2*

*Chair: Duncan Bassett (United Kingdom)*
*Fernando Rivadeneira (Netherlands)*

13:30 – 14:00 **The International Mouse Phenotyping Consortium: An important new resource for skeletal research**
*Graham Williams (United Kingdom)*

14:00 – 14:30 **Big Data and the Skeleton – Lessons and Perspectives from the UK Biobank**
*Jonathan Tobias (United Kingdom)*

13:30 – 14:30 **Meet the Expert 6 – Basic/Translational:**

**Bioengineering of Articular Cartilage**
*Jennifer H. Elisseeff (United States)*

13:30 – 14:30 **Meet the Expert 7 – Clinical/Public Health**

**Bone Imaging Beyond DXA**
*Andrew Burghardt (United States)*
13:30 – 14:30  **Meet the Expert 8 – Basic/Translational**  
**Biomechanical Characterization of the Bone Matrix in Health and Disease**  
*Björn Busse (Germany)*

13:30 – 14:30  **Meet the Expert 9 – Basic/Translational**  
**Metabolism of Osteoblasts / Skeletal Cells**  
*Ryan Riddle (United States)*

13:30 – 14:30  **Meet the Expert 10 – Clinical/Public Health**  
**Translating research from the Bone Clinic to the Laboratory and back again**  
*Stuart Ralston (United Kingdom)*

14:30 – 14:45  **Break / Poster Exhibition / Industry Exhibition**

14:45 – 16:15  **Industry Sponsored Session 3**  
*See page 148*

16:15 – 16:45  **Break / Poster Exhibition / Industry Exhibition**

16:45 – 17:45  **Plenary Oral Presentations 2:**  
**Bone Pathophysiology**  
*Chair: Antonia Sophocleous (Cyprus)  
Bender Tamás (Hungary)*  
– 7 minutes presentation + 3 minutes discussion –

16:45 – 16:52  **PLO07**  
Absence of the fractalkine receptor CX3CR1 decreases inflammatory bone resorption but increases the inflammatory phenotype of inflammatory osteoclasts  
*Maria-Bernadette Madel (France)*

16:55 – 17:02  **PLO08**  
Tumour-derived extracellular vesicles affect the molecular profile of osteoblasts and stimulate osteoclast and endothelial functions  
*Alfredo Cappariello (Italy)*
17:05 – 17:12 Mendelian randomization analysis reveals a causal influence of circulating sclerostin levels on bone mineral density and fractures

Jie Zheng (United Kingdom)

17:15 – 17:22 Skin autofluorescence, a non-invasive biomarker for advanced glycation end-products, is associated with prevalent vertebral fractures independent of BMD: the Rotterdam study

Komal Waqas (Netherlands)

17:25 – 17:32 Keratinocyte-derived S100A9 is important for psoriatic arthritis, but not psoriasis

Liliana Mellor (Spain)

17:35 – 17:42 22 new osteoarthritis susceptibility genes identified using novel rapid-throughput joint phenotyping methods

Natalie C Butterfield (United Kingdom)

Selected session for 'Ask a Question’ app feature

17:45 – 18:00 Break / Poster Exhibition

18:00 – 19:00 Concurrent Oral Poster Presentations 2: Clinical / Public Health

Chair: Izabella Gomez (Hungary)
Peter Pietschmann (Austria)

- 3 minutes presentation + 2 minutes discussion -

18:00 – 18:03 The fracture predictive ability of lumbar spine BMD and TBS as calculated based on different combinations of the lumbar spine vertebrae

Enisa Shevroja (Switzerland)

18:05 – 18:08 Balance function impairment and muscles strength deficiency in patients with osteoporotic vertebral fractures

Larisa Marchenkova (Russia)

18:10 – 18:13 Men with COPD have increased risk of vertebral fractures independent of smoking: a prospective cohort study

Fjorda Koromani (Netherlands)

18:15 – 18:18 Gut microbiota analysis and its skeletal effects in a sample of elderly subjects from a prospective population-based study

Simone Bianciardi (Italy)

18:20 – 18:23 Medical management of atypical femur fractures: a systematic literature review

Denise van de Laarschot (Netherlands)
18:25 – 18:28 Impact of renal function on BMD response to bisphosphonate treatment: real world observational data using linkage to national registers  
Bo Abrahamsen (Denmark)

18:30 – 18:33 Lumbosacral transitional vertebrae and the association with low back pain and spine degeneration: the Rotterdam study  
Satya Ramcharan (Netherlands)

18:35 – 18:40 Clinical, biochemical and radiological profile of normocalcaemic hyperparathyroidism: a multicentric cross-sectional evaluation  
Andrea Palermo (Italy)

18:40 – 18:43 Vitamin D supplementation in pregnancy: a randomized double-blind controlled trial  
Rajesh Khadgawat (India)

18:45 – 18:48 -308G/A tumor necrosis factor gene polymorphism may influence bone mineral density in pediatric inflammatory bowel diseases  
Michail Kostik (Russia)

18:50 – 18:58 Long-term bone mineral density changes after surgical cure in patients with tumor Induced osteomalacia  
Luciano Colangelo (Italy)

---

18:00 – 19:00 Concurrent Oral Poster Presentations 2: Bartók  
Basic / Translational  
Chair: Eleni Douni (Greece)  
Vito Guarnieri (Italy)

18:00 – 18:03 Pleckstrin homology domain containing protein family member 1 (PLEKHM1) regulates bone resorption through sealing zone dynamics and lysosomal targeting in osteoclasts  
Anh Tran (United Kingdom)

18:05 – 18:08 Three-dimensional mechanical loading activates YAP/TAZ pathway and chemokines expression in osteocytes  
Mylène Zarka (France)

18:10 – 18:13 Theobroma cacao extracts as a treatment for FGFR3-related disorders  
Ludovic Martin (France)

18:15 – 18:18 Thyroid hormones augment osteoblast differentiation via the BMP-Smad1/5 signaling pathway  
Franziska Lademann (Germany)

18:20 – 18:23 PIT2 deficiency results in skeletal phenotype associated with alteration of bone marrow adipose tissue  
Sarah Beck-Cormier (France)
18:25 – 18:28 Synergistic effects of chronic nicotine exposure and diabetes mellitus (DM) on deterioration in bone microstructure and geometry: an experimental study in male rats
Petar Milovanovic (Serbia)

18:30 – 18:33 Osteocalcin administration improves glucose metabolism in a lean model of type 2 diabetes
Patricia Das Neves Borges (Portugal)

18:35 – 18:38 Far upstream element binding protein 3 expression is associated with bone formation
Nika Lovsin (Slovenia)

18:40 – 18:43 Leveraging unconfounded genetic risk scores to stratify fracture risk by age at onset
Carolina Medina-Gomez (Netherlands)

18:45 – 18:48 Mid1 is a novel mediator of subchondral bone resorption in antigen-induced arthritis
Nina Lukač (Croatia)

18:50 – 18:53 Impaired muscle fiber morphology in the Chihuahua zebrafish model of classical dominant osteogenesis imperfecta
Imke A.K. Fiedler (Germany)

18:55 – 18:58 The bone biomechanical response during sclerostin-neutralizing antibodies treatment is maintained in periostin knockout mice
Maude Gerbaix (Switzerland)

19:00 – 20:00 New Investigator Seminar and Gathering
Lehár 1+2
Chair: Abbas Jafari (Denmark)
- 6 minutes presentation + 2 minutes discussion –

19:00 – 19:06 Chronic inflammation in HLA-B27 transgenic rats, a model of spondyloarthritis, results in body and bone marrow fat depletion
Stefanie Thiele (Germany)

19:08 – 19:14 Oxytocin-increase in bone, soleus muscle and hypothalamic paraventricular nuclei regulates the response to cold stress in mice exerting phenotype-dependent protective effects towards slow-twitch muscle
Claudia Camerino (Italy)

19:16 – 19:22 AKAP11 is a positive regulator of osteoblast extracellular matrix formation and mineralization
Vincent Ka Fai Cheng (Hong Kong)

19:24 – 19:30 Bone and the vasculature – a link between macro- and microvascular factors and bone metabolism?
Ines Foessl (Austria)
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<td>19:32 – 19:38</td>
<td>Serum levels of Wnt-signalling parameters poorly reflect bone mass and metabolism in healthy boys and men</td>
<td>Thiberiu Banica (Belgium)</td>
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<td>19:40 – 19:46</td>
<td>Vascular calcification relationship to bone microstructure in advanced chronic kidney disease</td>
<td>Syazrah Salam (United Kingdom)</td>
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Scientific Programme

The aim of this Conference is to bring together scientists and clinicians from a wide range of disciplines and from across the globe to gain a better understanding of the growing skeleton in health and disease. Attendees will have an interest in rare and inherited bone disorders, general aspects of bone health and bone disease in children, adolescents and young adults.

KEY TOPICS
- Bone development
- Bone fragility and metabolism
- Bone diagnostics
- Bone health in chronic and rare diseases
- Epidemiology
- Novel drug targets and medical therapies
- Nutrition and rickets
- Orthopaedics
- Physical activity and biomechanics

Comments from previous ICCBH attendees:
“I spent four wonderful, inspiring, exciting days”
“One of the friendliest and best organised conferences I have ever attended”
“This conference was amazing, both in terms of speakers and organisation”

www.iccbh.org
## Programme Overview

**Tuesday, 14 May 2019**

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**Legend**
- Clinical/Public Health
- Basic/Translational
- Clinical & Basic
- ECTS Events
Scientific Programme

Tuesday, 14 May 2019

08:00 – 09:00  Workshop 3: Clinical/Public Health
Phosphate FGF23
Chair: Carola Zillikens (Netherlands)
István Takács (Hungary)

08:00 – 08:30  New insights into the FGF23 health and disease
Seiji Fukumoto (Japan)

08:30 – 09:00  Osteomalacia, FGF23 in health and beyond
Alison Boyce (United States)

08:00 – 09:00  Workshop 3: Basic/Translational
Articular Cartilage
Chair: Thomas Funck-Brentano (Sweden)
Laurence Legeai-Mallet (France)

08:00 – 08:30  Articulate cartilage stem cells and renewal
Andrei S. Chagin (Sweden)

08:30 – 09:00  Articulate cartilage senescence
Jennifer H. Elisseeff (United States)

09:00 – 09:15  Break

09:15 – 10:15  Concurrent Oral Presentations 3 – Clinical/Public Health: Metabolism, Diabetes and Bone Quality
Chair: Roger Bouillon (Belgium)
Bente Langdahl (Denmark)

– 7 minutes presentation + 3 minutes discussion –

09:15 – 09:22  Bone quality analyses in cases with type 2 diabetes mellitus reflect patterns of femoral cortical bone reorganization along with high porosity
Eva Maria Wölfel (Germany)
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Erik Fink Eriksen (Norway)

09:35 – 09:42 The effect of the glucagon-like peptide-1 receptor agonist Liraglutide on bone turnover and bone mass in type 2 diabetes patients, a randomized controlled trial
Katrine Hygum (Denmark)

09:45 – 09:52 Genetic evidence for a causal role of serum phosphate in coronary artery calcification: the Rotterdam study
Carola Zillikens (Netherlands)

09:55 – 10:02 Periosteal expansion in response to endosteal resorption through periostin and RANKL interaction is conserved in humans
Nicolas Bonnet (Switzerland)

10:05 – 10:12 No progression in the bone phenotype with age in patients with the LRP5-High bone mass phenotype
Jens-Jacob Lindegaard Lauterlein (Denmark)

Selected session for ‘Ask a Question’ app feature

09:15 – 10:15 Concurrent Oral Presentations 3 – Basic/Translational: Bartók Molecular Basis of Bone Pathology
Chair: Laurent Beck (France)
– 7 minutes presentation + 3 minutes discussion –

09:15 – 09:22 TGFβ inhibition with chemotherapy heals murine myeloma bone disease and improves fracture resistance
Andrew Chantry (United Kingdom)

09:25 – 09:32 Absence of Dipeptidyl Peptidase 3 leads to increased oxidative stress and bone pathology
Ciro Menale (Italy)

09:35 – 09:42 Correlation between bone marrow adiposity and bone resorption in modeled osteoporosis
Eleni Douni (Greece)

09:45 – 09:52 Acvr2b ligand trap (luspatercept) improves bone mass in myelodysplastic mice and mice with ovariectomy-induced bone loss
Heike Weidner (Germany)

09:55 – 10:02 Transcriptomic approach to gain insights on multiorgan alterations affecting a mouse model of autosomal dominant osteopetrosis type2 (ADO2)
Antonio Maurizi (Italy)
<table>
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<tr>
<th>Time</th>
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| 10:05 – 10:12 | **COP36** Paradoxical effects of JZL184, an inhibitor of monoacylglycerol lipase, on bone remodelling in healthy and cancer-bearing mice  
_Silvia Marino (United Kingdom)_  
Selected session for ’Ask a Question’ app feature |
| 10:15 – 10:30 | **Coffee Break**                                                       |
| 10:30 – 11:30 | **Plenary Symposium 4 Sclerostin:** Bone Speaking to the Body  
_Chair: Geert Carmeliet (Belgium)  
Frank H. Ebetino (United States)_  
10:30 – 11:00 Sclerostin white adipose tissue and systemic metabolism  
_Ryan Riddle (United States)_  
11:00 – 11:30 Extended phenotype of human sclerostin deficiency  
_Natasha Appelman-Dijkstra (Netherlands)_ |
| 11:45 – 12:45 | **THE BIG 50: Bisphosphonates**  
_Chair: Claus Glüer (Germany)  
Peyman Hadji (Germany)_  
11:45 – 11:55 From water softeners to major medicines. Historical highlights.  
_Graham Russell (United Kingdom)_  
11:55 – 12:05 Treatment of osteoporosis – New insights into an old story?  
_Erik Fink Eriksen (Norway)_  
12:05 – 12:15 Treatment and prevention of bone metastasis – fact or fiction?  
_Robert Coleman (United Kingdom)_  
12:15 – 12:25 Future direction – Where do we go from here?  
_Frank H. Ebetino (United States)_ |
| 12:45 – 13:45 | **Plenary Oral Presentations 3:** Osteoporosis and Bone Loss  
_Chair: Szilvia Mészáros (Hungary)_  
– 7 minutes presentation + 3 minutes discussion –  
12:45 – 12:52 Loss of Dkk-1 in osteocytes prevents alveolar bone loss in mice subjected to experimental periodontitis  
_Paula Goes (Brazil)_ |
12:55 – 13:02  Can the circulating Wnt-antagonists Sclerostin and DKK1 alter bone mass by endocrine signalling?
*Paul Baldock (Australia)*

13:05 – 13:12  T cell-derived Dkk1 controls bone homeostasis and contributes to the pathogenesis of estrogen deficiency-induced bone loss
*Juliane Colditz (Germany)*

13:15 – 13:22  Childhood exposure to passive smoking and bone health in adulthood
*Sanna Tolonen (Finland)*

13:25 – 13:32  Comparison of the predictive ability of quantitative and qualitative scoring methods of osteoporotic vertebral fractures using operational skeletal fragility outcomes
*Fjorda Koromani (Netherlands)*

13:35 – 13:42  Low levels of sex steroids are associated with accelerated deterioration of cortical microarchitecture, in older men
*Anne Piot (France)*

**13:45 – 14:30  Awards & Closing**
*Chair: Anna Teti (Italy)*

- Onsite selected Oral Presentation – Basic/Translational: TBA
- Onsite selected Oral Presentation – Clinical/Public Health: TBA
- 2019 East-Meets-West Research Award
  *Presented by Anna Teti (Italy)*
- 2019 ECTS-AgNovos New Investigator Awards
  *Presented by Anna Teti (Italy)*
- 2019 ECTS-Bone Reports New Investigator Awards
  *Presented by Anna Teti (Italy)*
- 2019 ECTS-ICCBH New Investigator Awards
  *Presented by Anna Teti (Italy)*
- 2019 ECTS Travel Awards
  *Presented by Anna Teti (Italy)*
- 2019 ECTS Allied Health Professional Award
  *Presented by Anna Teti (Italy)*
- 2019 ECTS Webinar Award
  *Presented by Anna Teti (Italy)*
- 2019 ECTS Academy-IBI Poster Focus Award
  *Presented by Anna Teti (Italy)*
2019 ECTS Academy-IBI New Investigator Seminar Award

*Presented by Anna Teti (Italy)*

Handover & Closing Remarks

*Anna Teti (Italy)*
Tuesday May 14th, 2019, 15:00 – 16:00

RUBICON Symposium
Novotel Budapest City, Alkotas utca 63-67, 1123 Budapest (Hungary)

14:55 – 15:00
Welcome remarks
Anna Teti
Department of Biotechnological and Applied Clinical Sciences,
University of L’Aquila, Italy

15:00 – 16:00
Scientific session
Chairs: Michael Briggs
Institute of Genetic Medicine, University of Newcastle Upon Tyne,
Newcastle, UK
Malcolm Collins
Department of Human Biology, University of Cape Town,
Cape Town, South Africa

15:00 – 15:30
Fatty acid metabolism by osteoblasts and osteoclasts
Ryan C. Riddle
Department of Orthopaedic Surgery, Johns Hopkins University School of Medicine,
Baltimore, USA

15:30 – 16:00
ZIKA virus infection perturbs human bone cell function
Bram van der Eerden
Department of Internal Medicine, ERASMUS Universitair Medisch Centrum Rotterdam,
Rotterdam, The Netherlands
Posters

All posters will be displayed in the poster exhibition located on Level 2 in the Poster Loft.

Presenters are kindly asked to be present at their poster during the morning and afternoon coffee break, as well as during the lunch break for personal discussion about their results.

Presenters must be present at their poster during the following times:

12:00 – 13:00 on Sunday, 12 May for posters with the below topics:
- Biomarkers and Biochemical Testing
- Bone Bioengineer, Regeneration and Implants
- Bone Biomechanics and Quality
- Bone Development/Growth and Fracture Repair
- Cancer and Bone
- Energy Metabolism, Fat, Diabetes, Nutrition
- Mammalian and Non-Mammalian Models, including Preclinical Imaging
- Muscle, Physical Activity and Bone
- Osteoporosis: Evaluation and Imaging
- Osteoporosis: Pathophysiology and Epidemiology

12:00 – 13:00 on Monday, 13 May for posters with the below topics:
- Osteoblasts and Bone Formation
- Osteoclasts and Bone Resorption
- Osteocytes and Mechanobiology
- Chondrocytes and Cartilage
- Endocrine Factors
- Genetics & Epigenetics
- Inflammation, Arthritis and Other Joint Diseases
- Osteoporosis: Treatment
- Other Diseases of Bone and Mineral Metabolism
- Paediatric Bone Diseases
- Rare Bone Diseases
All posters are sorted by abstract topic:

**Biomarkers and Biochemical Testing**

**P001** Low bone turnover is associated with functional hypoparathyroidism in type 2 diabetes

  Janina Vavanikunnel¹, Lillian Sewing¹, Maria Triantafyllidou², Christoph Henzen¹, Leticia Grize³, Marius Kraenzlin², Christian Meier¹,²

  ¹Division of Endocrinology, Diabetes and Metabolism, University Hospital Basel, Basel, Switzerland, ²Department of Internal Medicine, Kantonsspital Luzern, Luzern, Switzerland, ³Swiss Tropical and Public Health Institute, University of Basel, Basel, Switzerland, ⁴Endocrine Clinic and Laboratory, Basel, Switzerland

**P002** The significance of two serum markers in the diagnosis of rheumatoid arthritis

  Nikolaos Varsamis¹, Nikolaos Zotos¹, Panagiotis Christodoulou¹, Maria Gianniki¹, Lampros Papageorgiou¹, Niki Tsifetaki¹

  ¹General Hospital of Ioannina, Ioannina, Greece

**P003** The effect of vitamin D supplementation on its metabolism in a randomized controlled trial

  Vito Francic¹, Stan Ursem², Niek Dirks³, Martin Keppel⁴, Verena Schwetz¹, Christian Trummer¹, Marlene Pandis¹, Felix Aberer⁵, Martin R. Grübler¹, Nicolas D. Verheyen⁶, Winfried März¹, Andreas Thomaschitz⁶, Stefan Pilz¹, Annemieke C. Heijboer², Barbara Obermayer-Pietsch¹

  ¹Division of Endocrinology and Diabetology, Endocrinology Lab Platform, Department of Internal Medicine, Medical University of Graz, Graz, Austria, ²Clinical Chemistry, Endocrine Laboratory, Amsterdam Gastroenterology & Metabolism, Amsterdam UMC, Amsterdam, Netherlands, ³University Institute for Medical and Chemical Laboratory Diagnostics, Paracelsus Medical University, Salzburg, Austria, ⁴Department of Internal Medicine, Division of Cardiology, Medical University of Graz, Graz, Austria, ⁵Synlab Academy, Synlab Holding Germany GmbH, München, Germany, ⁶Specialist Clinic of Rehabilitation Bad Gleichenberg, Bad Gleichenberg, Austria

**P004** Presence of anti-nuclear antibodies in patients with positive anti-ccp antibodies

  Nikolaos Varsamis¹, Nikolaos Zotos¹, Panagiotis Christodoulou¹, Maria Gianniki¹, Lampros Papageorgiou¹, Niki Tsifetaki¹

  ¹General Hospital of Ioannina, Ioannina, Greece

**P005** The association between osteocalcin, adiposity and bone health: results from a population based cohort

  Katerina Trajanoska¹,², Carolina Medina-Gomez¹,², M Carola Zillikens¹,², Andre G Uitterlinden¹, Fernando Rivadeneira¹,²

  ¹Department of Internal Medicine, Erasmus University Medical Centre, Rotterdam, Netherlands, ²Department of Epidemiology, Erasmus University Medical Centre, Rotterdam, Netherlands

**P006** Serum 25-hydroxyvitamin D levels of healthy men in greece

  Effimia Grigoriou¹, George Trovas², Ismini Dontas³, Nikolaos Papaioannou², Maria Stathopoulou¹, Polyzois Makras², Panagiotis Kokkoris³, Konstantinos Makris Makris², Symeon Tournis³, George Dedoussis¹

  ¹Department of Dietetics – Nutrition, Harokopio University, Athens, Greece, ²Laboratory for Research of the Musculoskeletal System, School of Medicine - University of Athens, Athens, Greece, ³UMR INSERM U1122, University of Lorraine, Nancy, France, ⁴Department of Endocrinology and Diabetes, 251 Hellenic Air Force General Hospital, Athens, Greece

**P007** A pilot study of a-KLOTHO serum concentrations in patients with kidney disease using a highly sensitive fluorescence immunoassay based on plasmonic microtiter plates

  Gerhard Hawa¹, Linda Sonnleitner¹, Albert Missbichler¹

  ¹FIANOSTICS GmbH, Wiener Neustadt, Austria
P008  Association between bone turnover marker and bone density in middle aged women
Heungyeol Kim¹, Hoon Cho²
¹Department of OB and GYN, Kosin University, College of Medicine, Busan, Korea, Republic of, ²Department of OB and GYN, Inje University, College of Medicine, Seoul, Korea, Republic of

P009  C-reactive protein for early detection of postoperative systemic infections in intertrochanteric femoral fractures
Won Chul Shin¹, Nam Hoon Moon², Seung Min Son¹, Kuen Tak Suh¹
¹Orthopaedic Surgery, Pusan National University Yangsan Hospital, Yangsan, Korea, Republic of, ²Orthopaedic Surgery, Pusan National University Hospital, Busan, Korea, Republic of

P010  Development and characterization of an extraction-free human CGRP sandwich ELISA
Elisabeth Gadermaier¹, Jacqueline Wallwitz¹, Gabriela Berg², Gottfried Himmler¹
¹The Antibody Lab GmbH, Vienna, Austria, ²Biomedica Medizinprodukte GmbH, Vienna, Austria

P011  Association of telomere length with lifestyle factors in postmenopausal women
Barbara Ostanek¹, Tomaž Kocjan², Andrej Janež², Janja Marc¹
¹Department of Clinical Biochemistry, University of Ljubljana, Faculty of Pharmacy, Ljubljana, Slovenia, ²Department of Endocrinology, Diabetes and Metabolic Diseases, University Medical Centre Ljubljana, Ljubljana, Slovenia

P012  FluoBoltTM-PERIOSTIN, a new highly sensitive fluorescence immunoassay for this matricellular protein based on plasmonic microtiter plates
Albert Missbichler¹, Teresa Jungwirth¹, Gerhard Hawa¹
¹FIANOSTICS GmbH, Wiener Neustadt, Austria

P013  Changes in protein profile in bone marrow extracts before and one year after gastric bypass surgery
Safiyye Süslü¹, Ingvild Kristine Blom-Høgestøl², Erik Fink Eriksen³, Janne Elin Reseland⁴
¹Biomaterials, University of Oslo, Oslo, Norway, ²Department of Endocrinology, Oslo University Hospital, Oslo, Norway, ³Institute of Clinical Medicine and Department of Endocrinology, University of Oslo and Oslo University Hospital, Oslo, Norway

P014  Diagnostic accuracy of a novel TRAP5b assay in diagnosing renal osteodystrophy
Syazrah Salam¹,²,³, Orla Gallagher¹, Fatma Gossiel¹, Arif Khwaja², Richard Eastell¹,²
¹Oncology and Metabolism, University of Sheffield, Sheffield, United Kingdom, ²Academic Unit of Bone Metabolism, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom, ³Sheffield Kidney Institute, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom

P015  Biocompatibility and osteogenic potential of calcium phosphate for cleft palate repair
Mehdi Alrubayee¹,², Sarah Jones¹, Mohammad Islam², Peter Mossey²
¹Cell Biology, University of Dundee, Dundee, United Kingdom, ²University of Dundee, Dundee, United Kingdom, ³Orthodontic and Craniofacial, University of Dundee, Dundee, United Kingdom

P016  Serum levels of Wnt-signalling parameters poorly reflect bone mass and metabolism in healthy boys and men
Thiberiu Banica¹, Charlotte Verroken¹, Hans-Georg Zmierczak¹, Stefan Goemaere², Sara Vandewalle¹, Jean-Marc Kaufman², Bruno Lapauw²
¹Department of Endocrinology, Unit for Osteoporosis and Metabolic Bone Diseases, Ghent University Hospital, Ghent, Belgium, ²Ghent University Hospital, Ghent, Belgium

P017  Sex steroids as determinants of Wnt-Signalling markers in men
Thiberiu Banica¹, Charlotte Verroken¹, Hans-Georg Zmierczak¹, Stefan Goemaere¹, Justine Defreyne¹, Guy T’Sjoen¹, Jean-Marc Kaufman¹, Bruno Lapauw²
ND-P001 Age-related changes in bone cells
Nihad Dawood1, Rob Van T Hof1, Anna Daroszewska1, Blandine Poulet1
1Department of Endocrinology, Unit for Osteoporosis and Metabolic Bone Diseases, Ghent University Hospital, Ghent, Belgium

Bone Bioengineer, Regeneration and Implants

P018 Glycoengineering as a tool for regulating behaviour of bone marrow-derived mesenchymal stromal cells in biofabrication
Stephan Altmann1, Jürgen Mut2, Natalia Wolf2, Julian Bechold2, Franz Jakob3, Jürgen Seibel2, Regina Ebert1
1Orthopedic Center for Musculoskeletal Research, University Wuerzburg, Wuerzburg, Germany, 2Institute of Organic Chemistry, University Wuerzburg, Wuerzburg, Germany

P019 The impact of kaolinite on human periodontal cells
Anna Sonja Müller1,2, Klara Janjić1,2, Gunpreet Oberoi1,2, Andreas Moritz1,2, Hermann Agis1,2
1Department of Conservative Dentistry and Periodontology, University Clinic of Dentistry, Medical University of Vienna, Vienna, Austria, 2Austrian Cluster for Tissue Regeneration, Vienna, Austria

P020 Stress-shielding-induced bone loss following total hip arthroplasty affects orientation of newly formed collagen in the proximal femur
Kilian Stockhausen1, Fedor Dering1, Michael Hahn1, Michael Amling1, Björn Busse1
1Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

P021 Synergistic effect of hyperbaric oxygen therapy with parathyroid hormone [1-34] on calvarial bone graft in irradiated rat
Kyeong-Mee Park1, Sungtae Kim1, Wonse Park1
1Department of Advanced General Dentistry, Yonsei University College of Dentistry, Seoul, Korea, Republic of, 2Department of Periodontology, Seoul National University, School of Dentistry, Seoul, Korea, Republic of

P022 The frequency of loading alters the bone healing response around implants
Renan de Barros e Lima Bueno1, Ana Paula Dias1, Katia Ponce1, John Brunski2, Antonio Nanci1
1Stomatology, Université de Montréal/School of Dental Medicine, Montréal, Canada, 2Department of Surgery, Stanford University/School of Medicine, Stanford, United States

P023 A decellularized human bone scaffold as an in vitro model of the skeletal stem cell niche
Ana Rita Pereira1,2, Dominic Gehweiler1, Drenka Trivanovic1,2, Theresa Kreuzhaller1,2, Marietta Herrmann2,4
1IZKF, University Clinic Wuerzburg, Wuerzburg, Germany, 2Orthopedic Center for Musculoskeletal Research, University of Wuerzburg, Wuerzburg, Germany, 3AO Research Institute Davos, Davos, Switzerland, 4IZKF Group Tissue Regeneration in Musculoskeletal Diseases, University Clinic Wuerzburg, Wuerzburg, Germany

P024 Dynamic deformation by fluid flow on hematopoietic progenitor cells alters osteoclast differentiation
Cornelia Bratengeier1, Aneta Liszka1, Astrid D. Bakker2, Anna Fahlgren1
1Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden, 2Department of Oral Cell Biology, ACTA-University of Amsterdam and Vrije Universiteit Amsterdam, Amsterdam, Netherlands
P025  Longitudinal monitoring of degradation processes of bioresorbable magnesium-alloy implants using micro-CT in-vivo: the MgBone project
Timo Damm¹, Heike Helmholz², Olga Will³, Mirko Gerle¹, Jana Humbert¹, Berengere Luthringer¹, Oula Penata-Medina¹, Tuula Penata-Medina¹, Sanjay Tiwari³, Claus-C. Glüer¹, Regine Willumeit-Römer⁴
¹Department of Radiology and Neuroradiology, Section Biomedical Imaging, Molecular Imaging North Competence Center (MOIN CC), University Medical Center Schleswig-Holstein (UKSH), Kiel University, Kiel, Germany, ²Institute of Materials Research, Metallic Biomaterials, Helmholtz-Zentrum Geesthacht, Zentrum für Material und Küstenforschung, Geesthacht, Germany, ³Department of Oral and Maxillofacial Surgery, University Medical Center Schleswig-Holstein (UKSH), Kiel University, Kiel, Germany, ⁴Helmholtz-Zentrum Geesthacht, Zentrum für Material und Küstenforschung, Institute of Materials Research, Metallic Biomaterials, Geesthacht, Germany

P026  Single-dose local administration of teriparatide with octacalcium phosphate collagen composites achieved bony reconstruction after canine mandibular amputation
Keiko Matsui¹, Tadashi Kawai², Yushi Ezoe¹, Toshiki Yanagisawa³, Ayato Yasuda³, Tetsu Takahashi¹, Shinji Kamakura³
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P027  Promoted efficiency of alendronate-coated β-tricàlumin phosphate in local delivery of bone morphogenetic protein-2
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P028  Autologous blood coagulum as a carrier for BMP6 in posterolateral lumbar spine fusion
Igor Erjavec¹, Marko Pecin², Lovorka Grgurevic¹, Nikola Stokovic¹, Tatjana Bordukalo-Niksic¹, Slobodan Vukicevic¹
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P029  Improved proliferation and differentiation potential of aged adipose stem-progenitor cells
Rebecca E. Holding¹,², Sanjay Sharma³, Richard O.C. Oreffo², Sylvia L.F. Pender¹,²
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P030  Extracellular vesicle protein and miRNA cargo reflect functional heterogeneity of mesenchymal stromal cells
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P031  Osteoblast-derived extracellular vesicles drive mineral nucleation in stem cell cultures
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ND-P002  Synergistic effect of hyperbaric oxygen therapy with parathyroid hormone [1-34] on calvarial bone graft in irradiated rat  
Kyeong-Mee Park¹, Wonse Park¹, Kee-Deog Kim¹, Sungtae Kim²  
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ND-P003  Dynamic deformation by fluid flow on hematopoietic bone marrow cells alters osteoclast differentiation  
Cornelia Bratengeier¹, Aneta Liszka¹, Astrid Diana Bakker², Anna Fahlgren¹  
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ND-P004  Titanium with nanotopography induces osteoblast and inhibits osteoclast differentiation  
Helena Bacha Lopes¹, Rayana Longo Bighetti-Trevisani¹, Beatriz Poker¹, Larissa Castro-Raucci¹, Emanuela Prado Ferraz¹, Alann Thaffarell Portilho Souza¹, Gileade Freitas¹, Adalberto Luís Rosa¹, Marcio Mateus Beloti¹  
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Bone Biomechanics and Quality

P032  Application of pair distribution function studies to hydroxyapatite for assessment of physicochemical bone quality  
Emily L Arnold¹, Charlene Greenwood², Dean S Keeble³, Keith D Rogers¹  
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P033  Effects of manganese enhanced hydroxyapatite implants into tibia on strength of the mandible in rats  
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P035  Cortical quantitative ultrasound variables for the estimation of proximal femur BMD  
Reinhard Barkmann¹, Florian Fischer¹, Melanie Gräsel¹, Claus-C. Glüer¹  
¹Biomedical Imaging, University Clinic Kiel, Kiel, Germany

P036  Bone tissue level changes in the human clavicle and ribs with aging  
Hannah McGivern¹, Nicholas Marquez-Grant¹, Peter Zioupos¹  
¹Cranfield Forensic Institute, Cranfield University, Shrivenham, United Kingdom

P037  Assessment of bone loss in distal phalangeal joint in Chinese patients with primary hyperthrophic osteoarthropathy by high-resolution peripheral quantitative computed tomography  
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P038  Osteocalcin is required for the alignment of biological apatite crystallites but not for the regulation of bone formation, glucose metabolism, testosterone synthesis, and muscle mass  
Toshihisa Komori¹, Ryosuke Ozasa¹, Takuya Ishimoto¹, Takayoshi Nakano¹, Takeshi Morishita²  
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P039 Differential response of trabecular and cortical bone following recovery from microgravity-induced bone loss
Katharina Jähn¹, Dimitri A. Atiakshin², Tim Rolvien¹, Thorsten Schinke¹, Michael Amling¹, Björn Busse¹
¹Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, ²Institute of Experimental Biology and Medicine, Voronezh State Medical University, Voronezh, Russian Federation

P040 Cortical shell thickness in thoracic vertebrae is age- and region-dependent
Annika vom Scheidt¹, Eric Flavio Grisolia Seifert¹, Michael Amling¹, Björn Busse¹
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P041 Alterations of bone geometry, bone volumetric density, and microarchitecture but not areal bone mineral density in Chinese patients with primary hypertrophic osteoarthropathy
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P042 Secondary dislocation of distal radius fractures is associated with lower total and cortical volumetric bone mineral density and lower cortical thickness at the distal radius
Anne Marjan Daniels¹,²,³, Heimrich M.J. Janzing¹, Caroline E. Wyers², Bert van Rietbergen⁴,⁵, Piet P.M.M. Geusens⁶,⁷, Sjoerd Kaarsemaker⁸, Martijn Poeze⁹, Joop P. van den Bergh¹⁰
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P043 A novel algorithm to predict bone changes based on physiological loading in a preclinical murine model
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P044 Microcracks in subchondral bone plate is associated with cartilage preservation
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Bone Development/Growth and Fracture Repair

P045 Histomorphometric parameters and histological findings of the guided bone regeneration using biphasic calcium phosphate paste
Olga Cvijanović Pezoa¹, Željka Perić Kačarević², Marija Pejakić³, Marko Matijević³, Tanja Čelić⁴, Ana Terezija Jerbić Radetic⁴, Sanja Zorić Cvek¹
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P046  Periostin accelerates bone healing mediated by human mesenchymal stem cell-embedded hydroxyapatite/tricalcium phosphate scaffold
Won Chul Shin¹, Nam Hoon Moon², Seung Min Son¹, Kuen Tak Suh¹
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P048  Skeletal maturation in relation to ethnic background in children of school age
Olja Grgić¹, Carolina Medina-Gomez¹, Katerina Trajanoska¹, Brunilda Dhamo², Andre G. Uitterlinden³, Eppo B. Wolvius³, Fernando Rivadeneira³
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P049  Autologous bone graft substitute containing autologous blood coagulum with rhBMP6 accelerates bone formation compared to commercial rhBMP2 on bovine collagen
Nikola Štoković¹, Igor Erjavec¹, Natalia Ivanjko¹, Kristian Bakić¹, Viktorija Rumenović¹, Ivona Matić-Jelić¹, Slobodan Vukićević¹
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P050  miR-31-5p and miR-33a-family promoters of human mesenchymal stem cells osteoblast differentiation by HIF-1α and EMT signaling modulation
Viviana Costa¹, Francesca Salamanna¹, Valeria Carina¹, Lavinia Raimondi¹, Angela De Luca¹, Daniele Bellavia¹, Alice Conigliaro¹, Milena Fini¹, Riccardo Alessandro¹,², Gianluca Giavaresi¹
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P051  Distinct pre-osteoblastic expression of the novel high bone mass gene SMAD9 in the zebrafish skeletal model
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P052  Variation in mandibular cortical thickness in relation to bone mineral density in children of school age
Olja Grgić¹, Carolina Medina-Gomez¹, Justin T. van der Tas², Constanza Andaur-Navarro², Katerina Trajanoska¹, Andre G. Uitterlinden³, Eppo B. Wolvius³, Fernando Rivadeneira³
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P054  Roles of a transcription factor 19A in the osteoblast development of sternum
Mao Kuriki¹, Fuminori Sato¹, Kenta Sumiyama², Koichi Kawakami², Atsuko Sehara-Fujisawa¹
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P055  Histopathologic hypoxia-like changes and decreased volume in fetal growth plates following gestational hypoglycaemia in rats
Vivi Flou Hjorth Jensen1,2,3, Fiona McGuigan1, Kristina Akesson1
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P056  Delayed bone healing in HFD-induced obesity model: evidence for impaired differentiation capacity of osteoblasts and osteoclasts progenitors
Florence Figeac1,2, Michaela Tencerova1,2,3, Thomas L. Andersen4,5, Dan Remi Appadoo1, Nicholas Ditzel1,2, Moustapha Kassem1,2,6
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P057  Glucocorticoid receptor dimerization is deleterious in trauma-induced compromised fracture healing
Yasmine Hachemi1, Anna E. Rapp3, Ann-Kristin Picke1, Anita Ignatus3, Jan Tuckermann1
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P058  Novel role of syndecan 3 in regulating osteoblastogenesis through the wnt signalling pathway
Andrew Butcher1, Francesca Brito1, Gemma Charlesworth1, Amanda Prior1, George Bou-Gharios1, Adolorata Pisconti1, Rob van ,t Hof1, Anna Daroszewska1
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P060  Bone health index for the assessment of pediatric fracture risk
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ND-P005  Effect of Nerve Growth Factor monoclonal antibody on pain behaviours in a mouse model of fracture
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ND-P006  New bone mineral density standards adjusted for biological ages in children
Annamaria Zsakai1, Dorina Annar1, Agota Muzsai1, Piroaska Feher1, Eva Bodzsa1
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ND-P007  Inhibition of KIAA1199 (CEMIP) enhances osteoblast differentiation and in vivo bone formation
Li Chen1, Kaikai Shi1, Florence Figeac1, Weimin Qiu1, Nicholas Ditzel1, Justyna Kowal1, Moustapha Kassem1,2
ND-P008  PDGFRβ signaling drives the expansion, recruitment, and blood vessel affinity of skeletal stem/progenitor cells for bone repair
Naomi Dirckx1, Anna-Marei Böhm1, Robert J. Tower1, Nicolas Peredo1, Sebastian Vanuytven2, Koen Theunis2, Elena Nefyodova1, Ruben Cardoen1, Volkhard Lindner1, Thierry Voet2, Matthias Van Hul1, Christa Maes1
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Cancer and Bone

P061  Inhibition of breast cancer bone metastasis by KT
Yunjo Soh1, Saroj Kumar Shrestha2, Ming Yang3, Mahesh Sapkota3, Young Ran Park3
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P062  CD73/adenosine pathway involvement in bone metastases induced by non-small cell lung cancer stem cells
Mara Compagno1, Giulia Bertolini2, Dimas Carolina Belisario1, Cristiano Bracci2, Alberto Horenstein3, Fabio Malavasi3, Riccardo Ferracini3, Ilaria Roato1
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P063  Effect of PDE4 inhibitors on osteosarcoma cells growth in-vitro
Aurélie Moniot1, Christine Guillaume1, Ingrid Allart-Simon1, Janos Sapi2, Sophie C. Gangloff1, Stéphane Gérard1, Frédéric Velard1
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P064  Potentiated anti-tumor effects in human osteotropic breast cancer cells by combined inhibition of the mevalonate pathway and the p38 kinase
Andy Göbel1,2, Romy Riffel1, Dorit Breining1, Martina Rauner1, Lorenz C. Hofbauer1,2,3, Tilman D. Rachner1,2,3
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P065  Bone microarchitecture and bone turnover in the irradiated human mandible
Hannah Dekker1, Engelbert AJM Schulten1, Hubert W van Essen2, Gerrit Jan Blom3, Elisabeth Bloemen4, Chris M Ten Bruggenkaate4,5, Arja M Kullaa6, Nathalie Bravenboer2,7
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P066 Role of autophagy in the crosstalk between osteosarcoma and the bone microenvironment
Valérie Pierrefite-Carle1, Olivier Camuzard1, Nadia Ben Abderrahman1, Tatiana Gritsaenko1, Sabine Santucci-Darmanin1, Sophie Pagnotta2, Chantal Cros1, Fanny Burel-Vandenbos1, Dominique Heymann1, Georges F. Carle1
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P067 Alpha-tocopheryl succinate suppresses osteolytic bone metastasis of breast cancer by inhibiting migration of cancer cells and RANKL expression of osteoblasts
Bongjun Kim1, Hong Hee Kim1, Zang Hee Lee1
1Cell and Developmental Biology, Seoul National University School of Dentistry, Seoul, Korea, Republic of
P068 Investigating the functional role of the ZNF687 transcription factor in aggressive forms of Paget's disease of bone
Federica Scotto di Carlo1, Giuseppina Divisato1, Sharon Russo1, Marilina Piemontese2, Silvia Parisi2, Deborah Veis1, Marianna Fico1, Teresa Esposito1-5, Tommaso Russo1, Carmine Settembre1, Michael Whyte4,6, Fernando Gianfrancesco1
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P069 Disruption of prostate cancer cell – macrophage – osteoclast crosstalk by a novel TRAF6 inhibitor
Giovana Carrasco1, Ryan Bishop1, Antonio Maurizi2, Mattia Capulli2, Anna Sparatore3, Silvia Marino4, Aymen I. Idris1
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P070 Dissecting the role of CXCR4 in breast cancer cell-bone microenvironment interaction
Mattia Capulli1, Jon Karl Jürgenstein1, Isabella Baldini1, Kashmala Carys1, Antonio Maurizi1, Nadia Rucci1, Anna Teti1
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P071 Targeting the CaSR in breast cancer cells brings down colonization and migratory response in a trabecular bone explant model, and reduces osteolytic lesions in vivo
Souvik Das1, Antoine Gabrion2, Isabella Six1, Cedric Boudot1, Said Kamel1, Philippe Ciezardin5, Michel Brazier1, Romuald Mentaverri1
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P072 RANKL and mammary gland pathophysiology in modeled osteoporosis
Anthe Kolokotro1,2, Vagelis Rintos1, Evi Gkikopoulou1,2, Eleni Douni1,2
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P073 Contribution of cancer stem cells to the metastatic capacities of osteosarcoma
Joelle Thicaya Bouanga1, Jiyun Yoon1, Dominique Modrowski1
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P074 Metastatic breast cancer burden is reduced in a Tgif1-deficient bone microenvironment
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P076 Osteosarcoma cell-derived exosomes affect tumor microenvironment by specific packaging of microRNAs
Lavinia Raimondi1, Angela De Luca1, Alessia Gallo1, Viviana Costa1, Nicola Cuscino1, Mauro Manno2, Valeria Carina2, Daniele Bellavia1, Riccardo Alessandro2, Pier Giulio Conaldi2, Gianluca Giavaresi1
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P077 Myeloma-specific oncolytic adenovirus induces significant tumour oncolysis in vitro and in vivo and prevents cell line regrowth
Georgia Stewart1, Simon Tazzyman1, Darren Lath1, Jenny Down1, Michelle Lawson1, Munitta Muthana1, Andrew Chantry1
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P078 Vitamin D deficiency and increased risk of bladder and kidney carcinoma in Mediterranean population
Tanja Celic1, Olga Cvijanovic Peloza2, Ana Terezija Jerbic Radteic2, Josip Španjol3
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P079 Bone mineral density of lumbar spine and femur in patients with gynaecologic cancer
Hoon Choi1, Heungyeol Kim2
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P080 Changes in trabecular bone score and bone mineral density following allogeneic hematopoietic stem cell transplantation
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ND-P009 Is targeting Wnt signalling in Osteosarcoma therapeutically relevant?
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ND-P010 Changes of bone remodeling markers in breast cancer patients after combined treatment
Karen Vartanyan1
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Osteoblasts and Bone Formation

P081  Vitamin K role on the osteocalcin:GPRC6A axis: insights from non-mammalian models
Vânia Palma Roberto1,2, Gil Martins1, Jorge Dias3, Leonardo Mata1, Graça Miguel4, Maria Leonor Cancela1,2, Vincent Laizé1, Paulo J Gavaia1
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P082  Low adhesive scaffold type I collagen prepared from porcine skin regulates the expression of genes relating to osteogenic differentiation
Saori Kunii, Koichi Morimoto1
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P083  Up-regulation of inhibitors of DNA binding/differentiation gene during alendronate-induced osteoblast differentiation
Heungyeol Kim1, Hoon Choi2
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P084  The effect of regulation of TRPC activation on periodontitis progression
Ae Ri Kim1,2, Aeryun Kim1, Yu-Mi Yang1, Yun-Jung Yoo1,2, Eun-Jung Bak1
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P085  Role of Msx2 in the osteoblast bone specificity
Amélie Coudert1,2, Caroline Marty1, Khady Badjy1, Lila Zidoun1, Amina Mederreg1, Ariane Berda1, Valérie Geoffroy1,3
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P086  Tuftelin, HIF-I and HIF-II in intramembranous osteogenesis
Jan Bobek1, Veronika Oralová1, Ivana Žváčková, Hervé Lesot1, Eva Matalová1
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P087  Proposal of a new method to quantification of the mineralization process in vitro models
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P088 Excessive O-GlcNAcylation-inducing conditions inhibit Wnt/beta-catenin signaling in mesenchymal stromal cells
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P089 Towards a nutraceutical-based complementary medicine in bone health: cruciferous vegetables extracts and derivates induce osteogenic differentiation of human mesenchymal stromal cells
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P090 SIRT-1 mediates zingerone-stimulated osteoblast differentiation
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P091 Osteoblastic differentiation is inhibited by autocrine effect of osteoblasts cocultured with adipocytes
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P092 Identification of new players in phosphate signaling pathway in osteogenic cells
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P093 Cyanobacteria as a source for bone anabolic compounds
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P094 Direct impact of glucocorticoid receptor on the RANKL promoter activity
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P095 Clinical results of bone marrow mesenchymal stem cell implantation for osteonecrosis of the femoral head
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P096 Regulation of collagen proteostasis by FAM134B during bone growth
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P098 Marine plants as valuable sources of antioxidant and anabolic bone compounds
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P099 Zika virus infection perturbs osteoblast function
Noreen Mumtaz1, Andre van Wijnen2, Amel Dudakovic2, Marijke Schreuders-Koedam3, P. van den Doel1, Johannes van Leeuwen3, Marion Koopmans1, Barry Rockx1, Bram van der Ferden3
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P100 AKAP11 is a positive regulator of osteoblast extracellular matrix formation and mineralization
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P101 SSC-derived adipocytes induce the transdifferentiation of osteoblasts into pre-adipocytes
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P102 Adaptor protein CrkII negatively regulates osteoblast differentiation and function through JNK phosphorylation
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P103 hMSC-TERTSCAS9: a versatile tool to study osteoblast gene function
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P104 Syndecan-1 deficiency influences bone cell communication in vivo and in vitro in Mice
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ND-P011 MitoBoneLomics: Estradiol remodeling effect on mitochondrial activity during osteoblast differentiation
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Osteoclasts and Bone Resorption

**P105** Anti-inflammatory effect of Weissella cibaria on periodontal bone destruction mice model in vivo and Raw264.7 cell in vitro

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**P106** Impact of a caspase inhibitor on alveolar shape changes following tooth extraction, a pilot study

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**P107** Oleoylethanolamide, an endogenous GPR119 ligand, inhibits osteoclastic bone resorption and promotes apoptosis in mature osteoclasts

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**P108** Glucagon-like peptide 1 (GLP-1) increases bone resorptive activity of human osteoclasts in osteoclast/osteoblast co-cultures in vitro

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**P109** Effect of anti-Ly6G Ab on LPS-induced osteoclast formation in air pouch of mice

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**P110** Effect of KP-A038, an imidazole derivative, on osteoclast differentiation and inflammatory bone loss through downregulation of PRDM1

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P111  What are the peripheral blood determinants for increased osteoclast formation in the various inflammatory diseases associated with bone loss?

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P112  Targeted inactivation of Rin3 increases trabecular bone mass in aged mice

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P113  Ablation of Stabilin-1 enhances bone resorbing activity in in vitro osteoclasts

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P114  RANKL-specific increase in p38 phosphorylation enhances NFATc1 and Atp6v0d2 causing increased osteoclastogenesis in ageing

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P115  Regulation of the Cdc42-PAK2 axis by DCTN1 controls osteoclastogenesis

Yong Deok Lee¹, Min Kyung Kim¹, Jun-Oh Kwon¹, Min-Kyoun Song¹, Suhan Jung¹, Zang Hee Lee¹, Hong-Hee Kim¹

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P116  Comprehensive analysis of osteoclastogenic proteome reshaping reveals a novel regulator of osteoclast differentiation and function

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P117  Increased resorption activity of osteoclasts observed in transient receptor potential channel TRPC6 deficient mice and cell lines can be attenuated by inhibition of TRPC3

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P118 Pleckstrin homology domain containing protein family member 1 (PLEKHM1) regulates bone resorption through sealing zone dynamics and lysosomal targeting in osteoclasts
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P119 Macrophage-derived thymidine phosphorylase promotes osteoclastogenesis and bone resorption in inflammatory osteolysis
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P120 miR-342-3p regulates the generation of osteoclasts
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ND-P013 Binding and uptake of CCL11 in preosteoclasts and osteoclasts
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Osteocytes and Mechanobiology

P121 Response to PTH in an osteocyte-rich ex vivo model
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P122 Correlations between the osteocyte network and its surrounding matrix in newly formed bone
Victoria Schemenz1,2, Ralph André Gjardy1, Fereshteh Falah Chamasemani1, Alexander van Tol1,2, Paul Roschger2, Peter Fratzl3, Roland Brunner1, Richard Weinkamer1, Bettina M. Willie1, Wolfgang Wagnermaier1
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P123 Mineralization and autophagy in bone is suppressed by EphrinB2 through the RhoA/ROCK pathway
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**P124** Three-dimensional mechanical loading activates YAP/TAZ pathway and chemokines expression in osteocytes


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**P125** Relationship between the fluid flow pattern through the lacunocanalicular network and adaptive mechano-response in mouse tibia

*Alexander van Tol*, 1,2 *Victoria Schemenz*, 1,2, *Wolfgang Wagermaier*, Andreas Roschger, 1,3 Hajar Raz*, 1,3 *Isabela Vitienes*, Peter Fratzl*, Bettina Willie*, Richard Weinkamer*

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**Chondrocytes and Cartilage**

**P126** Trichloroethylene-related compound S-(1, 2-dichlorovinyl)-L-cysteine localized on mouse cartilage

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**P127** Glucocorticoid treatment in TNF-alpha overexpressing mice impairs bone growth and humanin levels

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**P128** Low adhesive scaffold collagen prepared from type I collagen induces the chondrogenic differentiation of human bone marrow stromal cells

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**P129** TFEB promotes chondrocyte ER remodelling via transcriptional regulation of ER-phagy

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**P130** Parathyroid hormone treatment modulates cartilage quality

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**P131** Investigating the role of the AP-1 transcription factor in osteoarthritis using genetically engineered mice

*Kazuhiko Matsuoka*, 1 Erwin F Wagner*
P132  Theobroma cacao extracts as a treatment for FGFR3-related disorders
Nabil Kaci1,2, Ludovic Martin3, Suzanne Decaudaveine1, Valentin Estibals1, María De la Luz Cádiz-Gurrea3,4, Catherine Benoist-Lasselin1, Salvador Fernández-Arroyo5, Antonio Segura-Carretero4, Laurence Legeai-Mallet1
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P133  A ‘NGS-digital PCR’ method gives new evidences on the molecular mechanism responsible for osteochondromas’ growth in mo disease
Elena Pedrini1, Serena Corsini1, Ilaria Melandri1, Elisabetta Abelli1, Luca Sangiorgi1
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P134  Endogenous Lin28a protects osteoarthritic cartilage breakdown through HMGA2 expression
Yohan Jouan1,2, Joanna Sana1,2, Augustin Latourte1,2,3, Pascal Richette1,2,3, Hang-Korng Ea1,2,3, Martine Cohen-Solal1,2,3, Eric Hay1,2
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ND-P015  CRYAB suppresses the occurrence of osteoarthritis by regulating the proliferation of chondrocytes and degradation of extracellular matrix
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ND-P016  Progression of histopathological OA hallmarks following mechanical joint loading
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Endocrine Factors

P135  The role of Dickkopf-1 in thyroid hormone-induced changes of bone remodeling
Elena Tsourdi1, Juliane Colditz1, Franziska Lademann1, Eddy Riijntjes2, Josef Koehrle2, Christof Niehrs2,3, Lorenz Hofbauer1, Martina Rauner1
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P136  Oxytocin-increase in bone, soleus muscle and hypothalamic paraventricular nuclei regulates the response to cold stress in mice exerting phenotype-dependent protective effects towards slow-twitch muscle
Claudia Camerino1,2, Elena Conte1, Adele Romano2, Marialuisa De Ceglia2, Maria Rosaria Carratu2, Silvana Gaetani2, Domenico Tricarico2
P137 Intestinal calcium absorption upregulates during lactation without the vitamin D receptor (VDR) but is downregulated without calcitriol: evidence of an alternate receptor?
Beth J. Kirby¹, Brittany A. Ryan¹, K. Berit Sellars¹, René St-Arnaud²,³, Christopher S. Kovacs¹
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P138 Thyroid hormones augment osteoblast differentiation via the BMP-Smad1/5 signaling pathway
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P139 The thyroid hormone transporter Mct8 is a negative regulator of trabecular bone mass in male mice
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P140 Anti-Müllerian Hormone deficiency: a new mouse model for bone changes following natural menopause?
Christiane van As¹, Marijke Schreuders-Koedam¹, Jenny Visser¹, Bram van der Eerden¹
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P141 Obesity and flat vertebra
Maria Del Pilar Abijado Guzman¹, Raul Maria Veiga Cabello¹, Miguel Cantalejo Moreira¹, Justo Ruiz Ruiz², Antonio Zapatero Gaviria³
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P142 Diabetes Mellitus: a synonym to functional hypoparathyroidism
Amit Saraf¹
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P143 The effectiveness of vitamin D supplementation in functional outcome and quality of life of lumbar spinal stenosis requiring surgery: randomized prospective controlled trial
Sangbong Ko¹, Wonkee Choi¹
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P144 A hospital based study of bone mass in asian Indian new born subjects
Rekha Ramot¹, Garima Kachhawa², Vidushi Kulshrestha³, Viveka P Jyotsna¹, Nandita Gupta¹, Ramesh Aggarwal¹, V Sreenivas³, Deva Kandasamy³, Rajesh Khadgawat¹
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P145  Normocalcaemic hypoparathyroidism: study of the prevalence and natural history in a United Kingdom referral population
Marian Schini\textsuperscript{1}, Recebba Stirling\textsuperscript{1}, Richard Eastell\textsuperscript{1}
\textsuperscript{1}Oncology and Metabolism, University of Sheffield, Sheffield, United Kingdom

ND-P017  The vitamin D metabolite ratio (VMR) – a useful tool for the assessment of patients with high serum 25-hydroxy vitamin D concentrations
Sieglinde Zelzer\textsuperscript{1}, Andreas Meinitzer\textsuperscript{2}, Karin Amrein\textsuperscript{3}, Walter Goessler\textsuperscript{4}, Markus Herrmann\textsuperscript{2}
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Energy Metabolism, Fat, Diabetes, Nutrition

P146  Aggravation of trabecular bone defect in ovariectomized Goto-Kakizaki (GK) type-2 diabetic rats
Kannikar Wongdee\textsuperscript{1,2}, Ratchaneewan Aeimlapa\textsuperscript{2,3}, Narattaphol Charoenphandhu\textsuperscript{2,3,4}
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P147  A reduced lactose yogurt containing galactooligosaccharides (GOS) as a tool for lactose intolerant cover calcium daily intake that ensures bone health
Mariana Seijo\textsuperscript{1}, Marina Soledad Bonanno\textsuperscript{1}, Claudia Veronica\textsuperscript{2}, Maria Luz Pita Martin de Portela\textsuperscript{1}, Carina V Bergamini\textsuperscript{3}, Irma V. Wolf\textsuperscript{2}, Maria Cristina Perotti\textsuperscript{2}, Susana Noemi Zeni\textsuperscript{1}
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P148  The effects of 60-day sodium benzoate intake and ionizing radiation on chemical composition of the lower incisor dentin in rats
Igor Stepanenko\textsuperscript{1}, Vladyslav Luzin\textsuperscript{2}, Yuliya Vesenko\textsuperscript{2}, Anna Govorova\textsuperscript{2}, Dmitri Kolesnikov\textsuperscript{2}
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P149  Macroelemental composition of bones in rats of various ages after excessive palm oil intake and administration of Garcinia cambogia extract
Aleksandr Lyashchuk\textsuperscript{1}, Vadyslav Luzin\textsuperscript{2}, Yuliya Venidiktova\textsuperscript{2}, Ilya Prikhodchenko\textsuperscript{2}
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P150  The sensory and sympathetic innervation of rat femur with type 1 diabetes mellitus
Sahar Mohsin\textsuperscript{1}, Jens Sunny\textsuperscript{1}, Maryam Hussain\textsuperscript{1}, Safa Shehab\textsuperscript{1}
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P151  Growth hormone secretagogue receptor is necessary to food restriction-induced increases in bone marrow adiposity in female mice
Nathalie Al Rassy\textsuperscript{1}, Odile Viltart\textsuperscript{2}, Virginie Tolle\textsuperscript{2}, Alexandre Labarthe\textsuperscript{2}, Mathieu Méquinion\textsuperscript{3}, Rawad El Hage\textsuperscript{4}, Pierre Hardouin\textsuperscript{1}, Christophe Chauveau\textsuperscript{1}
P152 PIT2 deficiency results in skeletal phenotype associated with alteration of bone marrow adipose tissue
Giulia Frangi1, Greet Kerckhofs2, Jeremy Boulestreau1, Florent Autrusseau3,4, Joëlle Veziers3,4, Jérôme Guicheux3,4, Guillaume Penel5, Christophe Chauveau6, Xavier Prieur7, Laurent Beck3, Sarah Beck-Cormier3
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P153 Synergistic effects of chronic nicotine exposure and diabetes mellitus (DM) on deterioration in bone microstructure and geometry: an experimental study in male rats
Petar Milovanovic1, Marko Stojanovic2, Djordje Antonijevic1, Aleksandar Cirovic1, Miroslav Radenkovic2, Marija Djuric1
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P154 Osteocalcin administration improves glucose metabolism in a lean model of type 2 diabetes
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P155 The comparison of serum vitamin D, bone mineral density and nutrient intake according to obesity in young adult women
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P156 Body mass index effect on total and undercarboxylated osteocalcin in normoglucomic adult men
Carlos Lugones1, Marina Soledad Bonanno1, Graciela M Brito2, Dana Watson2, Mariana Rey Saravia1, Liliana Zago1, Carlos Alfredo Gonzalez Infantino1, Susana Noemi Zeni3
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P157 Association between global cardiac calcification (GCCS) and osteoporosis
Stefano Gonnelli1, Paolo Carrai1, Tommaso Picchioni1, Mario Alessandri1, Carla Caffarelli1, Luigi Gennari1, Ranuccio Nuti2
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P158 Clinical fractures following type 1 diabetes remission through pancreas transplantation alone: prevalence and patient characteristics
Caterina Conte1,2, Silvia Costantini1, Elisabetta Falbo1, Carlo Socci1, Massimiliano Bissolati1, Paola Angela Maffi1, Antonio Secchi1,2
P159  Cardio-metabolic health and bone mineral density in postmenopausal women: a Korean population–based study  
Hoon Kim1, Seung-Yup Ku1, Chang Suk Suh1, Seok Hyun Kim1, Young Min Choi1, Jung Gu Kim1  
1Department of Obstetrics and Gynecology, Seoul National University Hospital, Seoul, Korea, Republic of

P160  Investigation of bone fragility in patients with type 2 diabetes mellitus by high resolution quantitative computed tomography of the femoral shaft: the DiabOS study  
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P161  Changes in bone marrow adipose tissue one year after Roux-en-Y gastric bypass: a prospective cohort study  
Ingvild Kristine Blom-Hogestol1, Tom Mala1, Jon A Kristinsson1, Jette Barlach2, Cathrine Brunborg3, Hanne L Gulseth1, Erik Fink Eriksen1  
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P162  Maternal vitamin D status in 2nd and 3rd trimester and offspring bone mass at age 8-9 years: an observational study  
Astrid Kamilla Stunes1,2, Mats Peder Mosti1,2, Klara Evjen Seim1, Elise Constance Trydal1, Signe Nilsen Stafne3, Miriam Katharina Gustafsson4,5, Unni Syversen1,5  
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P163  Bone characteristics in elderly men with hypolactasia  
Christoph W. Haudum1,2, Natascha Schweighofer1,2, Albrecht Schmidt3, Caterina Colantonio4, Ewald Kolesnik5, Burkert Pieske4, Thomas R. Pieber1,2, Barbara Obermayer-Pietsch1,2  
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ND-P018  Targeting the Calcium-Sensing Receptor in an inflammatory bowel disease model  
Taha Elajnaf1, Luca lamartino1, Christian Müller1, Marcella Bassetto2, Theresa Manhardt1, Ildiko Mesteri1, Sabina Baumgartner-Parzer4, Enikő Kallay1, Martin Schepelmann1  
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ND-P019  Red rice yeast (RRY). An alternative in Rheumatoid Arthritis (RA) and hyperlipidemia  
Blanca Varas de Dios1, Maria Martín Fuentes2  
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ND-P020  The efficacy of complex kinesiotherapy in weight loss and muscle function improving in obesity patients
Valeria Vasileva¹, Larisa Marchenkov¹
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Genetics & Epigenetics

P164  SOX 6 does not regulate RANKL gene expression through its proximal promoter region
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P165  Screening for osteoarthritis candidate gene through TSA (Trial Sequential Analysis, TSA)
Yu-Chiao Wang¹, Sui-Lung Su¹
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P166  Association of collagen type I alpha1 gene polymorphism with bone mineral density and fractures in patients with chronic kidney disease stage 5
Sergei Mazurenko¹, Aleksander Enkin², Michael Aseev³, Oksana Mazurenko⁴, Larisa Ermolaeva¹, Peter Soin¹
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P167  1,25-Dihydroxyvitamin D3 partially restores the osteoblast and osteoclast functions of hemizygous β-globin knockout thalassemic mice
Narattaphol Charoenphandhu¹,²,³, Ratchaneevan Aeimlapa²,⁴, Saovaros Svasti⁵, Kannikar Wongdee²,⁶
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P168  Genetic variants in PRRG1 are associated with cardiovascular parameters according to diabetes stage, sex and BMI
Natascha Schweighofer¹,², Christoph W Haudum¹,², Albrecht Schmidt³, Ewald Kolesnik³, Caterina R Colantonio⁴, Burkert Pieske³, Thomas R Pieber¹,², Barbara Obermayer-Pietsch²
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P169  Validation of GWAS-derived novel regulators of bone homeostasis
Iryna Krystofoforova¹, Einav Wircere¹, Chen Shochat-Carvalho¹, David Karasik²
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P170  RNA-sequencing analysis of peripheral blood monocytes from postmenopausal women with osteoporosis
Aldo Hugo de la Cruz Montoya¹, Eric Gustavo Ramirez Salazar², Pablo M González de la Rosa³, Cei Abreu Goodger³, Manuel Quiterio⁴, Jorge Salmerón⁵, Rafael Velázquez Cruz²
P171 A novel splicing mutation in LRP5 in idiopathic osteoporosis causes RANKL upregulation via noncanonical Wnt pathway
Manon Ricquebourg1,2, Eric Haÿ1, Thomas Funck Brentano1,2, Martine Cohen-Solal1,2, Corinne Collet1,2
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P172 Zebrafish crisprants recapitulate BMD decrease observed in Lrp5 KO, indicating they may be used for screening of BMD candidate genes
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P173 Far upstream element binding protein 3 expression is associated with bone formation
Nika Lovsin1, Einav Wircer1, Ajda Ogrin1, Maša Zrimšek3, Chen Shochat1, Iryna Kristofovorova1, Petra Malavasi2, Janja Zupan1, Vid Prijatelj2, Bram van der Eerden3, Fernando Rivadeneira4, David Karasik1, Janja Marc1
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P174 Leveraging unconfounded genetic risk scores to stratify fracture risk by age at onset
Carolina Medina-Gomez1, Katerina Trajanoska1, Chun Chieh Fan1, Ole A. Andreassen1, Anders M. Dale1, Andre G. Uitterlinden1, Tyler M. Seibert2, Fernando Rivadeneira1
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P175 Functional assays of two non-coding variants in WNT16
Núria Martínez-Gil1, Neus Roca-Ayats1, Nurgül Atalay1, Natàlia García-Giralt2, Adolfo Diez-Pérez2, Xavier Nogués2, Leonardo Mellibovsky2, Daniel Grinberg1, Susanna Balcells1
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P176 Genome-wide association study identifies one novel locus associated with thickness and mineralization of metacarpal bones
Olja Gronic1, Carolina Medina-Gomez2, Katerina Trajanoska2, Andre G. Uitterlinden2, Eppo B. Wolvius3, Fernando Rivadeneira1
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P177 Variants within the ZNF384 and COL1A1 genes influence bone mineral density and fracture risk in maltese postmenopausal women
Melissa M. Formosa1, Marichela Schembri1, Justine Lanzon1, Angela Xuereb-Anastasi1
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P178  **MiR-146a a key Player in bone metabolism**  
*Victoria Saferding1, Melanie Hofmann1, Julia S. Brunner1, Antonia Puchner1, Silvia Hayer1, Melanie Timmen2, Richard Stange2, Josef S. Smolen1, Günter Steiner1, Stephan Blueml1*

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P179  **Identification of novel predisposing mutations in familial Paget’s disease of bone**  
*Maria Materozzi1, Daniela Merlotti2, Simone Bianciardi2, Simone Cenci2, Ranuccio Nuti3, Luigi Gennari3*

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**ND-P021**  **Pathogenic variants in SGMS2 define a novel form of early-onset osteoporosis and implicate sphingomyelin metabolism in skeletal homeostasis**  
*Minna Pekkinen1, Paulien Terhal2, Lorenzo Botto3, Petra Henning1, Riikka Mäkitie1, Paul Roschger2, Matthijs Kol4, Maria Magnusson4, John Carey5, Ulf Lerner5, Vesa Olkonen1, Klaus Klaus hofer2, Joost Holt huis5, Outi Mäkitie1*

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**Inflammation, Arthritis and other Joint Diseases**

P180  **Changes in the microstructural and mechanical properties in the medial condyle of human distal femur in advanced osteoarthritis**  
*Kwangkyoun Kim1, Ye-Yeon Won2*

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P181  **Aloe-emodin inhibits osteogenic differentiation and calcification of mouse vascular smooth muscle cells**  
*Yunjo Soh1, Saroj Kumar Shrestha1, Ming Yang1, Yong Park1*

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P182  **The features and distribution of chronic non-bacterial osteomyelitis in Russian Federation**  
*Mikhail Kostik1, Maria Makhova1, Alexander Mushkin2, Vyacheslav Zorin2, Evgeny Suspisitin1, Eugenia Isupova1, Shamay Magomedova1, Hiroshi Takayanagi1*

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P183  **Description of a sandwich ELISA to quantify human leucine-rich α-2 glycoprotein 1 in serum and plasma**  
*Elisabeth Gadermaier1, Jacqueline Wallwitz1, Gabriela Berg1, Gottfried Himmler1*

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P184  **Microtomographic assessment of bone quality in murine joints affected by psoriasis arthritis**  
*Felix N. Schmidt1, Liliana F. Mellor2, Michael Amling2, Erwin F. Wagner2, Björn Busse1*

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P185 Potential of freeze-dried human dental pulp derived stem cell conditioned media on the healing of inflammatory alveolar bone loss
Soon Jung Hwang1,2,3, In Sook Kim1
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P186 Preclinical diabetes accelerates onset of Osteoarthritis – lessons from model system
Samuel Joshua Pragasam1, Vijayalakshmi Venkatesan1
1Stem Cell Research/Biochemistry, National Institute of Nutrition - Indian Council of Medical Research, Hyderabad, India

P187 The SoxC family transcription factor Sox4 plays a role in osteoarthritis onset by up-regulating ADAMTS4 and ADAMTS5
Yoshifumi Takahata1, Eriko Nakamura1, Kenji Hata1, Kanta Wakamori1, Chika Fujiwara1, Tomohiko Murakami1, Naoshi Fukui2,3, Riko Nishimura1
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P188 Association of T-cell and B-cell aberrancies with disease activity in rheumatoid arthritis, psoriatic arthritis and ankylosing spondylitis
Alan Sucur1, Zrinka Jajic2, Marina Ilic Matijasevic3, Marinko Artukovic3, Darja Flegar1, Nina Lukac1, Tomislav Kelava1, Antonio Markotic1, Natasa Kovacic1, Danka Grcevic1
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P189 Effects of a ketogenic diet on the progression of osteoarthritis in obese mice
Thomas Soley1,2, Sara Delon1, Thierry Thomas1,2, Laurence Vico1, Maura Strigini1
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P190 Chronic inflammation in HLA-B27 transgenic rats, a model of spondyloarthritis, results in body and bone marrow fat depletion
Stefanie Thiele1, Ulrike Baschant1, Sylvia Thiele1, Luiza M. Araujo1,2, Ingrid Fert1,2, Maxime Breban1,2,4, Lorenz C. Hofbauer1, Martina Rauner1
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P191 Development of a novel biologic agent for treating RA
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P192 Mid1 is a novel mediator of subchondral bone resorption in antigen-induced arthritis
Nina Lukac1,2, Alan Sucur1,2, Darja Flegar1,2, Tomislav Kelava1,2, Katerina Zrinski Petrovic1,2, Dino Sis1,2, Vedran Katavic1,2, Danka Grcevic1,2, Natasa Kovačić1,2
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P193 New role for RANKL as a proinflammatory modulator in modeled inflammatory arthritis
Maria Papadaki1, Vagelis Riton1, Foteini Violitzi1, Trias Thireou1, Martin Samiotaki1, Eleni Douni1
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P194 Mutations in osteoarthritis susceptibility genes cause joint shape variation detectable at larval stages in zebrafish
Erika Kague1, Francesco Turci2, Yushi Yang2, Stephen Cross3, Elizabeth Lawrence1, Lucy McGowan1, Joanna Moss1, Paddy Royal4, Chrissy Hammond1
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Mammalian and Non-Mammalian Models, including Preclinical Imaging

P195 Metatarsal open fracture model in rats for in-vivo investigation of secondary bone healing
Adamu Abdul Abubakar1, Sahar Mohammed Ibrahim2, Ahmed Khalaf Ali3, Kareem Obayes Handool4, Mohammad Shaib Khan5, Mohammed Mustapha Noordin6, Tengku Ibrahim Tengku-Azmi7, Mohamad Yousif Loqman8
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P196 Activation of pro-apoptotic caspases in zebrafish skeletogenesis
Veronika Oralova1, Ann Huysseune1, P. Eckhard Witten1, Eva Svandova1, Barbora Vesela1, Adela Kratochvilova1, Eva Matalova1
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P197 Deletion of SREBF1, a functional bone-muscle pleiotropic gene, alters arachidonic acid-related lipid signaling in zebrafish
Chen Shochat1, Zihiying Wang2, Chenglin Mo2, Marco Brotto2, David Karasik1
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P198 Characterising the interplay between inflammation and skeletal remodelling during fracture repair in zebrafish
Lucy McGowan1, Alistair Vorster1, Jessye Aggleton1, Erika Kague1, Chrissy Hammond1
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P199 The curious case of bone pathology in Osx1-GFP::Cre mice
Laura Gorrell1, Elena Makareeva1, Anna M. Roberts-Pilgrim1, Shakib Omari1, Edward L. Mertz1, Sergey Leikin1
1NICHD, National Institute of Health, Bethesda, United States

P200 Mice lacking Plastin-3 display a specific defect of cortical bone acquisition
Timur Yorgan1, Hatrice Karakurt1, Tim Rolvien1, Sabine Windhorst2, Ralf Oheim1, Michael Amling1, Thorsten Schinke1
P201 Development of CRISPR/Cas9-based dual-fluorescent reporter mouse models to study in vivo single cell mechanomics of osteoblasts and osteoclasts
Esther Wehrle¹, Gisela A. Kuhn¹, Ariane C. Scheuren¹, Ralph Müller¹
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P202 Tissue specific effects of glucocorticoids suggest inter-organ communication during fin regeneration
Karina Geurtzen¹, Franziska Knopf²
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ND-P022 A new mouse model for Osteogenesis imperfecta reveals a link between polyadenylation by TENT5A and the pathogenesis of the disease
Olga Gewartowska¹, Monika Kusio-Kobialka², Aleksandra Bilska², Seweryn Mroczek², Andzej Dziembowski¹,²
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ND-P023 The killifish (Nothobranchius furzeri) as unique short-lived vertebrate model to study musculoskeletal aging in a time-lapse
Imke A.K. Fiedler¹, Maiwulanjiang Mamuti¹, Laura K. Rieger¹, Dario R. Valenzano², Björn Busse¹
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Muscle, Physical Activity and Bone

P203 Methods of diagnosis and treatment in a patient with calcific supraspinal tendinitis case report
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P204 Sarcopenia feature selection and risk prediction using machine learning
Hyung-Moo Park¹, Yong-Chan Ha², Jun-Il Yoo³, Young-Kyun Lee³, Deog-Yoon Kim⁴, Ha-Young Kim⁵
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P205 Running-exercise conditioning improves the healing of non-critical size bone defects in male Wistar rats
Céline Bourzac¹,², Morad Bensidhoum¹,², Mathieu Manassero¹,², Stéphane Pallu¹,²,³, Hugues Portier¹,²,³
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P206  Modulation for extracellular matrix synthesis using follistatin gene synthesis in scar tissue fibroblasts from patients with flexor tendon adhesions
Youngmi Kang¹, Ji-Hye Kim¹, Seong-Hwan Moon¹, Yun-Rak Choi¹, Hwan-Mo Lee¹, Byung-Ho Lee¹, Ji-Won Kwon¹
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P207  Impaired muscle fiber morphology in the Chihuahua zebrafish model of classical dominant osteogenesis imperfecta
Imke A.K. Fiedler¹, Tessa Krappa¹, Maiwulanjiang Mamuti¹, Francesca Tonelli², Antonella Forlino¹, Bjoern Busse¹
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P208  Longitudinal evaluation of the musculoskeletal and frailty phenotype in a mouse model of accelerated aging
Ariane C. Scheuren¹, Gommaar D’Hulst², Evi Masschelein², Gisela A. Kuhn¹, Esther Wehrle¹, Katrien De Bock², Ralph Müller¹
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P209  Effect of a complex exercise programme on postural balance, endurance and falls in women with established osteoporosis
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P210  Physiotherapy of patients with bone tumor or metastatic bone disease
Izabella Gomez¹, Éva Szekanecz², Zoltán Szekanecz², Tamás Bender³
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P211  Effectiveness of occupational therapy in the management of femoral fractures in extended care units for elderly patients
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P213  Relationship between body composition analysis and fracture risk in middle-aged and elderly women living in Northern China
Mei Dong¹, Shuxia Jin¹, Xingmei Han¹
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P214  Relation between serum albumin and sarcopenia in osteoporotic hip fracture patients
Jung-Taek Kim¹, Quan Hu Shen¹, Ye-Yeon Won¹
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P215  Sarcopenia defined by bioelectrical impedance and handgrip strength analysis in elderly patients with new stroke or transitory ischemic attack
Denis Krutko¹, Andrey Gruzmanov¹, Izzet Nurullaev¹, Sergey Mazurenko¹
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P216 Influence of muscle strength and balance on quality of life in postmenopausal osteoporosis women
Ileana Monica Borda¹,², Laszlo Irsay¹,², Viorela Ciortea¹,², Ioan Ona¹,², Rodica Ungur¹,²
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P217 Importance of sonoelastography in prediction of Achilles tendon rupture
Ivo Dumić-Cule¹, Gordana Ivanac¹, Domagoj Lemac², Boris Brkljacic¹
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P218 Association between body composition, osteoporosis, and diabetes in Korean elderly subjects (KNHANES 2008-2010)
Se Hwa Kim¹, Yoo Mee Kim¹, Jeong-Keun Park¹, Young Jun Won¹
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P219 SOST polymorphisms are associated with lean mass in Chinese male offspring
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P220 Birthweight, limb muscle mass and abdominal adiposity in middle age: findings from the UK biobank imaging enhancement
Elizabeth M Curtis¹, Justin K H Liu¹, Kate A Ward¹, Karen Jameson¹, Zahra Raisi-Eastabragh², Jimmy Bell¹, Steffen Petersen², Cyrus Cooper¹,², Nicholas C Harvey³,⁴,⁵
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ND-P024 The body composition analysis as a complementary tool in the screening of bone structural abnormalities
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Osteoporosis: Evaluation and Imaging

P221 Radiofrequency echographic multi spectrometry for diagnosis of osteoporosis in senile women
Elena Kirilova¹, Nikola Kirilov², Iliya Popov⁵, Stoyanka Vladeva¹
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P222 Orthopedic articles on surgery for osteoporotic fractures mentioned little about the treatment of osteoporosis
Ki-Bong Park¹, Jung-Hoi Goo¹, Wan-Seok Lee¹
¹Orthopedic Surgery, Good Samsun Hospital, Busan, Korea, Republic of
P223  Diagnostic strategy for elderly patients with isolated greater trochanter fractures on plain radiographs
Won Chul Shin¹, Nam Hoon Moon², Seung Min Son¹, Kuen Tak Suh¹
¹Orthopaedic Surgery, Pusan National University Yangsan Hospital, Yangsan, Korea, Republic of, ²Orthopaedic Surgery, Pusan National University Hospital, Busan, Korea, Republic of

P224  Correlation of bone mineral densities and body composition between GE-Lunar prodigy and Osteosys primus
Yong-Chan Ha¹, Jun-Il Yoo²
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P225  Incidence of osteopenia and osteoporosis among postmenopausal women through radiofrequency echographic multi spectrometry
Elena Kirilova¹, Nikola Kirilov², Iliya Popov³, Stoyanka Vladeva¹
¹Trakia University, Stara Zagora, Bulgaria, ²Medical University-Sofia, Sofia, Bulgaria, ³University of Burgas ,Asen Zlatarov', Burgas, Bulgaria

P226  Neglected bodily senses in women living with vertebral fractures: a focus group study
Sarah Drew¹, Emma M Clark¹, Usama Al-Sari¹, Rachael Gooberman-Hill¹, Jon H Tobias¹, Vfrac Study Team
¹Translational Health Sciences, University of Bristol, Bristol, United Kingdom

P227  Quality assurance of bone densitometry: 3 years experiences of a nation-wide follow-up in Hungary by using ESP Phantom
Csaba K. Horvath¹, Katalin Bors², Eva Hosszu³, Emoke Csupor³, Zsuzsanna Arany¹, Erika Gal Szanto¹, Szilvia Meszaros¹
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P228  Can forearm bone mineral density predict late reduction loss of distal radius fracture treated by cast immobilization?
Jin Hwan Kim¹, Hyun II Lee¹, Hoon Choi²
¹Department of Orthopedic Surgery, Inje University, Ilsan Paik Hospital, Goyang, Korea, Republic of, ²Department of Obstetrics and Gynecology, Inje University, Sanggye Paik Hospital, Seoul, Korea, Republic of

P229  Study of cortical and trabecular compartments through 3d-shaper in lung transplanted patients
Mireia Barceló-Bru¹, Alba Erra¹, Carina Espinet³
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P230  Transcultural adaptation and psychometric properties of the Korean version of the quality of life questionnaire of the European Foundation for Osteoporosis (QUALEFFO-41)
Young-Kyun Lee¹, Hyoung Moo Park², Yong-Chan Ha³, Youjin Lee⁴
¹Seoul National University Bundang Hospital, Seongnam, Korea, Republic of, ²Grace Women Hospital, Goyang, Korea, Republic of, ³Chung-Ang University College of Medicine, Seoul, Korea, Republic of, ⁴National Cancer Center, Goyang, Korea, Republic of

P231  Discrimination of hip fracture type for men with spatial differences in the distribution of bone
Ling Wang¹, Rui Zhang², Xiaoguang Cheng³, Xin Gao²
¹Beijing Jishuitian Hospital, Beijing, China, ²Suzhou Institute of Biomedical Engineering and Technology, Suzhou, China
P232  Radiofrequency echographic multi spectrometry (REMS) and trabecular bone score (TBS) are significantly associated with fragility fracture in postmenopausal women
Carla Caffarelli¹, Maria Dea Tomai Pitinca², Valentina Francolini¹, Ranuccio Nuti¹, Stefano Gonnelli¹
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P233  Utility of Trabecular Bone Score (TBS) for fracture risk assessment in glucocorticoid-induced osteoporosis
Helena Florez¹, José Hernández-Rodríguez¹, Africa Muxi³, Josep Lluis Carrasco², Sergio Prieto-González¹, Silvia Ruiz-Gaspà¹, Maria C. Cid¹, Ana Monegal¹, Núria Guàñabens¹, Pilar Peris¹
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P234  Association between muscle force and power with different pQCT and DXA-derived parameters in middle-aged adults
Gavin O Witlox¹, Katerina Trajanoska¹,², Trudy Voortman¹, Fernando Rivadeneira¹,²
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P235  Difference in bone Loss in patients with erosive and non-erosive hand osteoarthritis: a two-year longitudinal study
Olga Sleglova¹
¹Institute of Research in Reumatology, Prague, Czech Republic

P236  The fracture predictive ability of lumbar spine BMD and TBS as calculated based on different combinations of the lumbar spine vertebrae
Enisa Shevroja¹, François Mo Costabella¹, Berengère Aubry-Rozier¹, Elena Gonzalez Rodriguez¹, Olivier Lamy¹, Didier Hans¹
¹Lausanne University Hospital, Lausanne, Switzerland

P237  Balance function impairment and muscles strength deficiency in patients with osteoporotic vertebral fractures
Larisa Marchenkova¹, Ekaterina Makarova¹, Mikhail Eryomushkin¹
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P238  Trabecular bone score (TBS) and life expectancy (LE) with and without osteoporotic fracture
Enisa Shevroja¹,², Eralda Asllana², Fjorda Koromani², Taulant Muka², Oscar H. Franco², Carola Zillikens³, André G. Uitterlinden³, Didier Hans¹, Fernando Rivadeneira²,⁴
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P239  Peripheral trabecular bone microarchitecture is impaired in postmenopausal non-osteoporotic women with fragility fracture- the ChiVOS case-control study
Ning Jiang¹, Weibo Xia¹
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ND-P025  Patients on dialysis have markedly abnormal cortical hip parameters by dual-energy X-ray absorptiometry
Jasna Aleksova1,2, Peter Ebeling3, Mark Kotowicz4,5, Julie Pasco4,5,6, Chris Schultz7, Phillip Wong1,2, Frances Milat1,2, Grahame Elder8,9
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ND-P026  Fracture-Liaison-Service in Germany: T-Score results of DXA measurements in patients suffering from a fragility fracture
Pauline May1, Henrik Brandhorst1, Sabine Fillenberg1, Olga Gordijenko2, Veronika Koeppen3, Katharina Pfeifer3, Vanadin Seifert-Klauss1
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P240  Controlling hypoxia-inducible factor-2a is critical to maintaining bone homeostasis in mice
Sun Young Lee1, Jeong-Tae Koh1, Yun-Chan Hwang2, Jeong Joon Han2, Je-Hwang Ryu2
1Department of Pharmacology and Dental Therapeutics, School of Dentistry, Dental Science Research Institute, Chonnam National University, Gwangju, Korea, Republic of, 2Department of Conservative Dentistry, School of Dentistry, Dental Science Research Institute, Chonnam National University, Gwangju, Korea, Republic of

P241  Association between RUNX2 gene polymorphism and osteopenia among Asian elderly: a population-based case-control study
Guei Rung Chen1, Dung Jang Tsai1, Sui Lung Su1
1School of Public Health, National Defense Medical Center, Taipei, Taiwan, Republic of China

P242  Analysis of treatment, diagnostic measures and complications of osteoporosis in patients with new low-energy fractures
Denis Krutko1, Daria Isaenkova1, Regina Baskakova1, Sergey Mazurenko1
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P243  Association between VDR rs2228570 gene polymorphism and osteopenia among Asian elderly: a population-based case-control study
Yu-Chiao Wang1, Sui-Lung Su1
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P244  Primary hyperparathyroidism surgery. Our experience
Blanca Varas de Dios1, María Martín Fuentes1, Rosalía Sánchez Almaraz1, José Luis Porrero Carro1
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P245  Influence of bone health and vitamin D status in postmenopausal osteoporosis subjects in northern China
Mei Dong1
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Posters

P246 Prevalence of modifiable and non modifiable risk factors of osteoporosis in health care workers of < 40 years at tertiary health center of remote India
Amit Saraf
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P247 Risk of hip and subtrochanteric or femoral shaft fractures after bisphosphonate use in Korea women: an analysis using Korean national sample cohort
Young-Kyun Lee, Hyoun Moon, Young-Chan Ha, Youjin Lee
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P248 Serum iron indices are associated with bone mineral density in premenopausal women
Sung-Min Kim, A-Sol Kim, Hae-Jin Ko, Hana Moon, Hye-In Choi, Ji-Eun Song
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P249 Osteoporotic fractures in the elderly: is hyponatremia player or bystander?
Laura Anna Maria Schiara, Elena Grosso, Lorenzo Richiardi, Giovenale Moirano, Michelina Tibaldi, Elena Spertino, Carlotta Vezza, Giovanni Carlo Isia, Patrizia D’Amelio
Department of Medical Science, City of Health and Science Hospitals, Torino, Italy, Department of Orthopaedics, Traumatology, City of Health and Science Hospitals, Torino, Italy, Department of Medical Sciences, Cancer Epidemiology Unit-CERMS, City of Health and Science Hospitals, Torino, Italy

P250 Management of osteoporosis in patients living with HIV – a systematic review and meta-analysis
Jakob Starup-Linde, Simone Bruhn Rosendahl, Merete Storgaard, Bente Langdahl
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P251 Gastrectomy is associated with increased risk of osteoporotic fracture in community-dwelling elderly men 20 years or more after the surgery: Formen Cohort Study
Masayuki Iki, Yuki Fujita, Katsuyasu Kouda, Akiko Yura, Takahiro Tachiki, Junko Tamaki, Yuhu Sato, Jong-Seong Moon, Masami Hamada, Etsuko Kajita, Nozomi Okamoto, Norio Kurumatani, Fujiwara-kyo Study Group
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P252 Hematopoietic autophagy deterioration links to osteoporosis
Ye Yuan, Yixuan Fang, Jianrong Wang, Youjia Xu
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P253 Seasonally dependent decrease of the number of fractures in Poland in the years 2010-2015
Kinga Jedynasty, Mariusz Zięba, Piotr Giuszko, Władysław Grzeszczak, Szymańska Agnieszka, Andrzej Sliwczynski, Magdalena Walicka, Edward Franek
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P254  Secular trend of lumbar and femur bone mineral density measurements in women above 50 over 10 years
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P255  Risk factors associated with the development of fractures in glucocorticoid treated patients. The role of hypogonadism
Helena Florez1, José Hernández-Rodriguez2, Africa Muxi3, Josep Lluis Carrasco4, Sergio Prieto-González2, Silvia Ruiz-Gaspá1, Maria C. Cid2, Ana Monegal1, Núria Guarnabens1, Pilar Peris1
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P256  Bone and the vasculature – a link between macro- and microvascular factors and bone metabolism?
Ines Foessl1, Christoph Walter Haudum1, Vito Francic1, Ewald Kolesnik2, Albrecht Schmidt1, Gerald Seidel1, Christoph Singer3, Catherina Colantonio4, Natascha Schweighofer1, Andreas Wedlich3, Thomas R Pieber1, Barbara Obermayer-Pietsch4
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P257  Inflammatory bowel disease: a nationwide study of hip fracture and mortality risk
Johann Bartko1, Berthold Reichardt2, Roland Kocijan1, Klaus Klaushofer1, Jochen Zwerina1, Martina Behanova1
11st Medical Department, Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, Vienna, Austria, 2Burgenländische Gebietskrankenkasse, Eisenstadt, Austria

P258  Anterolateral femoral bowing and loss of thigh muscle are associated with occurrence of atypical femoral fracture: effect of failed tension band mechanism in mid-thigh
Won Chul Shin1, Nam Hoon Moon2, Seung Min Son1, Kuen Tak Suh1
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P260  Men with COPD have increased risk of vertebral fractures independent of smoking: a prospective cohort study
Fjorda Koromani1, Elizabeth Benz1, Lies Lahousse1, Enisa Shevroja1, Carola Zillikens1, Ling Oei1, Didier Hans2, Andre Uitterlinden1, Gabriel Krestin1, Bruno Stricker1, Guy Brusselle1, Edwin Oei1, Fernando Rivadeneira1
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P261 Gut microbiota analysis and its skeletal effects in a sample of elderly subjects from a prospective population-based study
Simone Bianciardi1,2, Tommaso Picchionii, Maria Materozzi1, Daniela Merlotti1, Carla Caffarelli1, Mario Alessandri1, Valentina Francolini1, Stefano Gonnelli1, Francesco Dotta1,2, Ranuccio Nuti1, Luigi Gennari1
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P262 Incidence of osteoporotic refractures and associated mortality in Korea using nationwide claims data
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P263 The accuracy of self-reported fractures among a Belgian cohort of postmenopausal women: the FRISBEE study
Felicia Baleanu1, Pierre Bergmann2, Virginie Kinnard1, Laura Iconaru1, S.I. Cappelle1, M. Moreau1, M. Paesmans1, R. Karmali1, J.J. Body1
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P264 Clinical risk factors (CRFs) for osteoporotic fractures (OFs) are function of the fracture site: data from the FRISBEE study
Laura Iconaru1, Michel Moreau2, Virginie Kinnard1, Felicia Baleanu1, Marianne Paesmans2, Rafik Karmali1, Pierre Bergmann4, Jean-Jacques Body1
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ND-P027 The association between abdominal obesity and osteoporotic fractures among elderly Israeli women
Orit Ofir1, Assaf Buch1,2, Vanessa Rouach1, Rebecca Goldsmith1, Naftali Stern2, Efrat Monsonego-Ornan1
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ND-P028 Sex hormones interaction with trabecular bone score and mineral density in men
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Osteoporosis: Treatment

P266 Influence of drug-based osteoporosis therapy on physical performance parameters and pain
Guido Schröder¹, Ulrike Voßmann², Verena Blaas², Hans-Christof Schöber³
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P267 Clinical effectiveness and safety of Denosumab in ESRF patients on dialysis: a systematic review
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P268 Treatment of osteoporotic hip fracture in asian elderly patients (osteosynthesis versus endoprosthesi)
Joon-Soon Kang¹
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P269 Short-term teriparatide treatment effect in patients with severe osteoporosis
Min Hyung Jung¹, Yong Il Ji²
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P270 The influence of nacre nutritional supplementation on bone preservation in aged mice
Patrice Laquerriere¹, Bruno Jessel¹, Norbert Laroche², Luc Malaval², Arnaud Vanden-Bossche³, Marie-Thérèse Linossier³, Mireille Thomas³, Myriam Normand³, Laurence Vico³, Marthe Rousseau⁴
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P271 Effect of a synthetic osteoconductive bone graft substitute with zeta potential control (geneX-ds) in the treatment of intertrochanteric fracture
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P272 Efficacy and safety of vertebroplasty and kyphoplasty in osteoporotic vertebral compression fracture with posterior cortical bone injury
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P273 Is really full length inramedullary nail necessary for treatment for atypical subtrochanteric femur fracture?
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P274 The clinical utility of TRACP-5b to monitor intravenous zoledronate and denosumab treatment of osteoporosis
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P275 Outcome of osteoporosis evaluation, treatment and follow-up in patients referred to a specialised outpatient clinic compared to patients in care of general practitioners
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P276 Denosumab in patients with chronic renal failure
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P277 Regional positive effects of acarbose on bone properties in female mice
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P278 IGF-I and Pamidronate affects differently mandible than other skeletal sites
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P279 Zoledronate, but not solely Calcium and Vitamin D, can prevent the accelerated periprosthetic bone loss after total hip arthroplasty in patients with low systematic BMD
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P280 Longitudinal effects of PTH(1-34) and mechanical loading on trabecular and cortical bone morphometry in the ovariectomized mouse
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P281 Hip fracture risk and antiresorptive treatment in patients with type 2 diabetes: a nationwide population based case control study
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P282 The bone biomechanical response during sclerostin-neutralizing antibodies treatment is maintained in peristin knockout mice
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P283 Medical management of atypical femur fractures: a systematic literature review
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P284 Impact of renal function on BMD response to bisphosphonate treatment: real world observational data using linkage to national registers
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P285  Motivations for eight years adherence to alendronate therapy
Jessica Pepe¹, Cristiana Cipriani ², Veronica Cecchetti ³, Carla Ferrara ¹, Vittoria Danese ⁴, Luciano Colangelo ¹, Salvatore Minisola ¹
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ND-P029  Comparison of the efficacy of eenosumab and zoledronic acid in postmenopausal women
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ND-P030  A case report of pregnancy and lactation-associated osteoporosis
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ND-P031  Osteoporosis treatment effectively reduces the rate of any-cause hospitalization: data from a nation-wide analysis
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ND-P032  Clinical recommendations for the prevention of MRONJ
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ND-P033  Romanian teriparatide therapeutic protocol- relationship to the patient’s profile and adherence to treatment
Carmen Gabriela Barbu ¹², Theodor Eugen Oprea ¹², Alice Albu ¹², Sorina Martin ¹², Anca Sirbu ¹², Elena Alexandru ², Amalia Arhire ¹, Simona Fica ¹²
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Other Diseases of Bone and Mineral Metabolism

P286  Microstructural analyses of historical bone samples presenting with tuberculosis
György Vekszler ¹, Elena Nebot Valenzuela ¹, Martin Dockner ², Karin WIltschke-Schrotta ³, Gerhard Weber ⁴, Michael Pretterklieber ⁴, Peter Pietschmann ¹
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P287  Novel ELISA for the detection of intact FGF23
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P288  Difference of alveolar bone loss in ligature-induced periodontitis model according to mouse strain
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P289 Degenerative medial meniscus retains some protective effect against osteoarthritis-induced subchondral bone changes
Gaelle Mitton1, Stéphanie Uk1, Klaus Engelke2,3, Jean Denis Laredo1,4, Christine Chappard1
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P290 Male spontaneously hypertensive rats develop poor bone mass and strength
Worachet Promruk1,2, Wacharaporn Tiyasatkulkovit1,2, Kwanchit Chaimongkolnukul1, Kanchana Kengkoom4, Nattapon Panupinths1,2, Narattaphol Charoenphandhu1,2,5,6
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P291 Humanin might protect against glucocorticoid induced osteoporosis in a mouse model of Duchenne muscular dystrophy
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P292 Hepcidin-resistant ferroportin mutation causes low bone mass in mice
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P293 Differentiation and functional activity of osteoclasts are impaired in CFTR-f508DEL patients
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P294 Hypophosphatasia, bilateral hip fractures and seizures
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P295 Endocrine osteoporosis: about 35 cases
Kawtar Nassar1, Saadiadia Janani2, Wafae Rachidi1, Ouafa Mkinski1
1 Ibn Rochd, Hassan II University, Casablanca, Morocco

P296 Reversible hypophosphatemic osteomalacia in a patient in dialysis therapy
Pierre-Emmanuel Cailleteau1, Seddick Benarbia2, Guillaume Allard3, Pablo Urena-Torres4, Martine Cohen-Solal1, Caroline Marty1
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P297  Correlation of serum 25-hydroxyvitamin D level with serum LDL, calcium level in Korean women

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P298  Paget's disease or bone metastasis? A case report with diagnostic challenge

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P299  Osteoporosis and hearing loss in older Koreans: findings from the Korea National Health and Nutrition Examination Survey (KNHANES) 2009-2011

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P300  Effect of Roux-en-Y gastric bypass on bone marrow adipose tissue and bone mineral density in non-diabetic postmenopausal women

Kerensa M. Beekman¹,², Annnegreet G. Veldhuis-Vlug³,⁴, Erik M. Akkerman¹, Geert J. Streekstra¹,², Yair Acherman³, Victor E. Gerdes³, Martin den Heijer³, Mario Maas¹, Nathalie Bravenboer⁵,⁶, Peter H. Bisschop²

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P301  Cardiovascular autonomic neuropathy as a cause of impaired physical functioning in subjects with chronic hypoparathyroidism

Gaia Tabacco¹, Anda Naci¹, Daria Maggi¹, Claudio Pedone¹, Lelli Diana¹, Assunta Santonati¹, Daniela Bosco¹, Roberto Cesareo¹, Alfonso Maria Di Tommaso¹, Nicola Napoli¹, Paolo Pozzilli², Silvia Manfrini¹, Andrea Palermo¹

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P302  Vascular calcification relationship to bone microstructure in advanced chronic kidney disease

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P303  Abdominal aortic calcification and cardiovascular events: a systematic review and meta-analysis of observational studies

Joshua R. Lewis¹,²,⁴, Kevin Leow², Pawel Szulc³, John T. Schousboe³, Douglas P. Kiel³, Armando Teixeira-Pinto³, Hassan Shaikh³, Michael Sawang², Nicola Bondonno¹, Ankit
P304 Lumbosacral transitional vertebrae and the association with low back pain and spine degeneration: the Rotterdam study
Satya Ramcharan 1, Ling Oei 2, Fjorda Koromani 1,2, Evelien I.T. de Schepper 3, Joyce B.J. van Meurs 2,4, Fernando Rivadeneira 2,4, Edwin H.G. Oei 1
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P305 Irisin in post-menopausal women with primary hyperparathyroidism: an interplay between irisin and PTH
Andrea Palermo 1, Lorenzo Sanesi 2, Graziana Colaianni 2, Gaia Tabacco 1, Anda Mihaela Naciu 1, Roberto Cesareo 3, Claudio Pedone 2, Diana Lelli 3, Giacomina Brunetti 5, Giorgio Mori 6, Silvia Colucci 5, Silvia Manfrini 1, Nicola Napoli 1, Maria Grano 1
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P306 Hypophosphatemic osteomalacia induced by long-term low-dose adefovir Dipivoxil: clinical characteristics of 140 cases
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P307 Clinical, biochemical and radiological profile of normocalcaemic hyperparathyroidism: a multicentric cross-sectional evaluation
Andrea Palermo 1, Anda Mihaela Naciu 1, Gaia Tabacco 1, Stefania Falcone 2, Assunta Santonati 1, Daria Maggi 1, Luca D’Onofrio 1, Silvia Briganti 1, Domenico Castellitio 1, Alessandro Casini 1, Claudio Pedone 3, Andrea Fabbrini 1, Nicola Napoli 1, Paolo Pozzilli 1, Silvia Manfrini 1, Roberto Cesareo 1
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P308 Vitamin D supplementation in pregnancy: a randomized double-blind controlled trial
Rajesh Khadgawat 1,2, Garima Kachhawa 1, Vidushi Kulshreshtha 1, Tarang Gupta 1, V Sreenivas 1, Nandita Gupta 1
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ND-P034  Manifestations of left ventricle function and arrhythmia in patients with long-standing hypoparathyroidism and pseudohypoparathyroidism
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ND-P035  Gender features of bone mineral density in the Ukrainian patients with neurological disorders
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ND-P036  Improvement of bone microarchitecture after 30 months of testosterone substitution therapy in young patients with Klinefelter syndrome
Anne Piot¹,², Ingrid Plotton¹,², Benoite Dancer³, Stéphanie Boutroy¹, Justine Bacchetta¹,⁶, Sylviane Aïlourd⁴, Hervé Lejeune⁵, Roland Chapurlat¹,², Pawel Szulc¹, Cyrille Confavreux¹,²
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ND-P037  Bone mineral density and fractures after lung transplantation – a long-term observational study
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Paediatric Bone Diseases

P309  Progressive, immobilizing osteoporosis in a 11 year old, male, identical twin – an (unsolved) case report
Mirko Rehberg¹, Sascha Meyer², Daniel Baumhoer³, Eckhard Schönau¹,⁴, Barbara Oehl-Jaschkowski², Oliver Semler³
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P310  Identification of an ATP6V1B1 variant in two related patients with distal renal tubular acidosis
Yiman Wang¹, Asmahan Abdalla², Mohamed Abdullah³, Johannes van Leeuwen¹, Annemieke Verkerk¹, M Carola Zillikens¹, Bram van der Feerden²
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P311  Longitudinal follow up of bone density in children with inflammatory bowel diseases
Yael Levy-Shraga¹,², Anatoly Shenkar³, Dalit Modan-Moses¹,², Amit Assa¹,², Yael Haberman¹,², Dror Shouval¹,², Anat Guz-Mark¹,², Avishay Lahad², Batia Weiss¹
P312  Intact mouse model to determine bioavailability of phosphorus from infant formulas
Sampada Chande1, Jonathan Fetene1, Ardy van Helvoort2,3, Steven Yanicelli4, Thomas Carpenter5, Clemens Bergwitz1
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P313  -308G/A tumor necrosis factor gene polymorphism may influence bone mineral density in pediatric inflammatory bowel diseases
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P314  Effects of zoledronic acid on vertebral shape of children and adolescents with osteogenesis imperfecta
Lujiao Li1,2, Wenbin Zheng1, Dichen Zhao1, Wei Yu1, Ou Wang1, Yan Jiang1, Weibo Xia2, Mei Li2
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ND-P038  Bone structural examinations in new subgroups of Turner-syndrome patients
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Rare Bone Diseases

P315  Bone and gaucher disease
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P316  Metabolic phenotyping in the rare bone disease Alkaptonuria: LC-QTOF-MS analysis of a new targeted HGD-/- mouse model identifies previously unreported urinary metabolite alterations
Brendan P Norman1, Juliette Hughes1, Andrew S Davison2, Norman B Roberts2, Lakshminarayan R Ranganath1, George Bou-Gharios1, James A Gallagher1
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P317  Defective O-glycosylation of FGF23 in a Chinese hyperphosphatemic familial tumoral calcinosis patient
Chang Liu1, Yiyi Gong1, Qianqian Pang1, Ou Wang1, Mei Li1, Xiaoping Xing1, Yan Jiang1, Weibo Xia1
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P318  TNAP inhibition in periodontal ligament cells during osteogenic differentiation leads to differential expression of mineralization and inflammation associated genes
Hannah Melms¹, Franz Jakob¹, Marietta Herrmann², Konrad Förstner³,⁴, Richa Bharti³,⁵, Birgit Mentrup⁶, Ulrich Schlagenhauf⁷, Stephanie Graser¹
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P319  Biophysical analysis of novel disease-causing mutation of CLCN7 gene
Eleonora Di Zanni¹, Alessandra Picollo¹
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P320  Gain-of-function of TMEM16E/ANOS scrambling activity causes gnathodiaphyseal dysplasia (GDD), an autosomal-dominant generalized skeletal syndrome
Eleonora Di Zanni¹, Antonella Gradogna¹, Cristina Picco¹, Joachim Scholz-Starke¹, Anna Boccaccio¹
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P321  New mouse model for atypical type VI osteogenesis imperfecta caused by IFITM5 S40L mutation
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P322  Development of lentiviral vector gene therapy for the treatment of autosomal recessive osteopetrosis
Sara Penna¹,², Valentina Capo¹, Elena Draghici¹, Lucia Sergi Sergi², Eleonora Palagano²,³, Francesca Ficara²,³, Erika Zonari³, Serena Scala¹, Luca Basso-Ricci³, Cristina Sobacchi²,³, Thorsten Schinke¹, Bernhard Gentner², Anna Villa¹,³
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P323  Mutations in the neuroblastoma amplified sequence (NBAS) gene in acrofrontofacial dysostosis type 1
Eleonora Palagano¹,², Giulia Zuccarini², Paolo Prontera³, Renato Borgatti³, Stefano Mantero⁴,⁶, Ciro Menale⁴,⁶, Antonella Forlino⁷, Paolo Uva⁸, Paolo Vezzoni⁴,⁶, Anna Villa¹,⁶, Giorgio R Merlo³, Cristina Sobacchi²,³
¹Humanitas Clinical and Research Institute, Rozzano (Milan), Italy, ²CNR-IRGB, Milan, Italy, ³Department Molecular Biotechnology and Health Sciences, University of Turin, Turin, Italy, ⁴Centro di Riferimento Regionale di Genetica Medica, Azienda Ospedaliera di Perugia, Perugia, Italy, ⁵Child Neuropsychiatry and Neurorehabilitation Department, Scientific Institute Eugenio Medea, La Nostra Famiglia, Bosisio Parini (LC), Italy, ⁶CNR-IRGB, Milan Unit, Milan, Italy, ⁷Department of Molecular Medicine, Unit of Biochemistry, University of Pavia, Pavia, Italy, ⁸CRS4, Science and Technology Park Polaris, Loc. Piscina Manna, Pula (CA), Italy
P324  Enzyme replacement therapy corrects bone remodeling pathologies, but not chondrocyte pathologies, in a mouse model for mucopolysaccharidosis type VI (MPS-VI)
Gretl Hendrickx¹, Anke Jeschke¹, Sandra Pohl¹, Thorsten Schinke¹
¹Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, ²Department of Biochemistry, Children’s Hospital, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

P325  Chronic recurrent multifocal osteomyelitis in children with hypophosphatasia explained by anti-inflammatory nucleotidase activity of tissue nonspecific alkaline phosphatase
Laurence Bessuelle¹, Anne Briolay¹, Cylia Mansouri¹, Alaeddine El Jamal¹, René Buchet¹, Marie Gleizes¹, Etienne Mornet¹, Jose Luis Millan¹, Caroline Fonta¹, David Magne¹
¹ICBMS UMR CNRS 5246 Equipe MEM2, University of Lyon 1, Villeurbanne, France, ²CERCO UMR CNRS 5549, University Paul Sabatier, Toulouse, France, ³Unité De Génétique Constitutionnelle, Centre Hospitalier de Versailles, Le Chesnay, France, ⁴Sanford Children’s Health Center, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, United States

P326  Interfamilial diversity in patients with collagen-related osteogenesis imperfecta
Lidlka Zhytnik¹, Katre Maasalu¹,², Binh Ho Duy³, Aare Märtson¹,²
¹Department of Traumatology and Orthopedics, University of Tartu, Tartu, Estonia, ²Clinic of Traumatology and Orthopedics, University of Tartu, Tartu, Estonia, ³Hue University of Medicine and Pharmacy, Hue University, Hue, Viet Nam

P327  COL1A1 C-propeptide mutations affect procollagen ER localization and reduce C-terminal procollagen processing
Aileen M. Barnes¹, Aarthi Ashok¹,², Elena Makareeva³, Marina Brusel³, Wayne Cabral¹,², Mary-Ann Weis³, Catherine Moali³, Emmanuel Bettler³, David Eyre⁵, John Cassella⁷, Sergey Leikin³, David J.S. Hulmes⁵, Efrat Kessler⁴, Joan C. Marini³
¹Section on Heritable Disorders of Bone and Extracellular Matrix, NICHD/NIH, Bethesda, United States, ²University of Toronto Scarborough, Toronto, Canada, ³Section on Physical Biochemistry, NICHD/NIH, Bethesda, United States, ⁴Goldschleger Eye Research Institute, Tel Aviv University, Tel-Hashomer, Israel, ⁵Molecular Genetics Section, NHGRI/NIH, Bethesda, United States, ⁶Orthopaedic Research Labs, University of Washington, Seattle, United States, ⁷Tissue Biology and Therapeutics Unit, University of Lyon, Lyon, France, ⁸Department of Forensic and Crime Science, Staffordshire University, Staffordshire, United States

P328  Radiological index in the flat vertebra
Raul Maria Veiga Cabello¹, Maria Del Pilar Ahijado Guzman²
¹Service of Rheumatology, Hospital Central de la Defensa Gómez Ulla, Madrid, Spain, ²Rheumatology, Hospital Universitario de Fuenlabrada, Fuenlabrada, Spain

P329  Bone islands
Agostino Gaudio¹, Rosario Rapisarda¹, Anastasia Xourafa¹, Cristina Gorgone², Teresa Mattina², Pietro Castellino¹
¹Department of Clinical and Experimental Medicine, University of Catania, Catania, Italy, ²Department of Biometric, University of Catania, Catania, Italy

P330  Lymphangiomatosis: a rare entity presented in two patients
Judit Donáth¹, Béla Fornett², Imre Antal³, Gyula Poór¹,⁴
¹National Institute of Rheumatology and Physiotherapy, Budapest, Hungary, ²University of Miskolc, Miskolc, Hungary, ³Semmelweis University, Budapest, Hungary, ⁴Semmelweis University Medical School, Budapest, Hungary

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Eveline Boudin¹, Nicky Roberts¹, Wim Van Hul¹, Filip Roelens², Geert Mortier¹
¹Department of Medical Genetics, University of Antwerp and University Hospital of Antwerp, Edegem, Belgium, ²AZ Delta Roeselare, Roeselare, Belgium
P332  A new ALPL gene mutation case report
Francesca Broggi1, Silvia Vai2, Maria Luisa Bianchi2, Emanuela Ponti2, Alessandra Mihalich1, Anna Maria Di Blasio1
1Istituto Auxologico Italiano, Milan, Italy

P333  1-alpha-hydroxylase-deficiency – lost in transition
Martin Munteanu1, Nora Matar1,2, Eva Manka1,2, Nicole Unger3, Jens Bauer4, Corinna Grasemann1,2
1Pediatric Endocrinology and Diabetology, Children’s Hospital, University Hospital Essen, Essen, Germany, 2Center for Rare Diseases Essen, ESZE, University Hospital Essen, Essen, Germany, 3Department of Endocrinology, Diabetes and Metabolism, University Hospital Essen, Essen, Germany

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Yiming Feng1, Weibo Xia1
1Peking Union Medical College Hospital, Beijing, China

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Nicola Hepp1, Anja Lisbeth Frederiksen2,3, Morten Dunø4, Jens-Erik Beck Jensen1
1Department of Endocrinology, Hvidovre University Hospital, Copenhagen, Hvidovre, Denmark, 2Department of Endocrinology, Odense University Hospital, Odense, Denmark, 3Department of Clinical Research, Faculty of Health, University of Southern Denmark, Odense, Denmark, 4Department of Clinical Genetics, Rigshospitalet University Hospital, Copenhagen, Copenhagen, Denmark

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1Medical University of Vienna, Vienna, Austria, 2The High Field MR Centre, Vienna, Austria, 3Charité - Universitätsmedizin Berlin, Berlin, Germany

P337  Long-term bone mineral density changes after surgical cure in patients with tumor induced osteomalacia
Luciano Colangelo1, Jessica Pepe1, Chiara Sonato1, Luciano Nieddu2, Alfredo Scillitani2, Federica Ferrone1, Valeria Fassino1, Maurizio Angelozzi1, Salvatore Minisola1, Cristiana Cipriani1
1Internal Medicine and Medical Disciplines, Sapienza, University of Rome, Rome, Italy, 2Faculty of Economics, University of International Studies, Rome, Italy

P338  The design of a long-acting PTH (TransCon PTH) phase 2 trial in patients with hypoparathyroidism, based on phase 1 results in healthy subjects
David B. Karpf1,2, Susanne PiHL, Sanchita Mourya2, Eshwari Kovoor1, Jonathan A. Leff1
1Clinical Development, Ascendis Pharma, Inc., Palo Alto, United States, 2Medicine/Endocrinology, Stanford University School of Medicine, Palo Alto, United States

ND-P039 Pro-osteogenic PEDF-PPARγ axis is antagonized by TGF-β pathway in type VI osteogenesis imperfecta (OI)
Heeseog Kang1, Susan Crawford2, Joan C. Marini2
1National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, United States, 2Saint Louis University, Saint Louis, United States

ND-P040 A case of differential diagnosis of hypophosphatemic rickets in Raine syndrome
Silvia Vai1, Francesca Broggi2, Nicoletta Masera3, Emanuela Ponti2, Anna Maria Di Blasio2, Maria Luisa Bianchi2
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Malachi McKenna\textsuperscript{1,2}, Rachel Crowley\textsuperscript{1,2}, Patrick Twomey\textsuperscript{1,2}, Mark Kilbane\textsuperscript{1,2}  
\textsuperscript{1}St. Vincent’s University Hospital, Dublin, Ireland, \textsuperscript{2}University College Dublin, Dublin, Ireland

ND-P042  Difficulties in the diagnosis of periapical translucencies of cemento-osseous dysplasia  
Andrea Bródy\textsuperscript{1}, Attila Zalatnai\textsuperscript{2}, Csaba Dobo-Nagy\textsuperscript{1}  
\textsuperscript{1}Department of Oral Diagnostics, Semmelweis University, Faculty of Dentistry, Budapest, Hungary, \textsuperscript{2}Department of Pathology and experimental Cancer research, Semmelweis University, Faculty of Medicine, Budapest, Hungary
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Abstract Reviewers

The ECTS thanks the 186 abstracts reviewers who marked all the abstract submissions for ECTS 2019 in their own time.
A full list of these reviewers can be found in the Abstract Book.

CME Accreditation

The 46th European Calcified Tissue Society Congress, Budapest, Hungary, 11/05/2019–14/05/2019 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 25 European CME credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME® credit to AMA credit can be found at www.ama-assn.org/education/earn-credit-participation-international-activities

Pre-Congress ECTS 2019
An application has been made for the Pre-Congress ECTS 2019 to the UEMS-EACCME® for CME accreditation of this event.

ECTS Congress 2019
Saturday 11 May 2019  6 credits
Sunday 12 May 2019  7 credits
Monday 13 May 2019  7 credits
Tuesday 14 May 2019  5 credits

Certificate of Attendance
To obtain CME accreditation, please complete the CME evaluation form which will be sent to you via email after the congress. The CME certificate will be available for download after completion of the evaluation.
Information for Speakers and Chairpersons

Information for Speakers

Please be at your session room at least 15 minutes prior to the start of your session. Please note that your speaking time as indicated in the email correspondences has to be strictly followed. If you are not certain about the assigned speaking time, please contact your session coordinator, or Ms. Julia Prätzas at the registration desk.

How to Submit your Presentation On-Site

Presentations for Pàtria, Bartók & Lehár 1 + 2

These rooms are connected to the media center. Therefore, we kindly ask all speakers presenting in these rooms to deliver and view/check their PowerPoint presentations at the speaker’s Media Center (located on Level 1, close to the registration desk) at least 2 hours prior to the start of their respective session. For sessions starting at 08:00 o’clock, the presentation should be delivered the previous day.

In order to avoid any delays, speakers are kindly requested to hand in their PowerPoint presentations on a USB stick. If you are bringing your own laptop, your presentation will be transferred on-site in the speaker’s Media Center.

Presentations for all other rooms

We kindly ask all speakers that are not presenting in Pàtria, Bartók, or Lehár 1 + 2 to bring their presentations on a USB stick to their respective session room. There will be no central media check for these rooms.

Speaking Times for Oral Presentations

• Plenary Oral Presentation: 7 minutes + 2 minutes discussion
• Concurrent Oral Presentations: 7 minutes + 3 minutes discussion
• Concurrent Oral Poster Presentations: 3 minutes presentation + 3 minutes discussion (Please prepare no more than 3-5 slides)
• SNAPs Presentations: 1 minute presentation (Please prepare a single slide)
• Poster Focus: 5 minutes presentation + 5 minutes discussion

Information for Poster Presenters

The poster exhibition is located in the Poster Loft on Level 2. Posters will be on display from Saturday, 11 May (12:00 o’clock) to Monday, 13 May (18:00 o’clock).

Posters can be mounted on Saturday, 11 May from 08:00 – 11:00 and removed on Monday, 13 May from 18:00 – 19:00. Presenters are kindly asked to be present at their poster during the morning and afternoon coffee breaks as well as during the lunch break for personal discussion about their results.

If you have sent your poster to GesconOnline SL – PosterSessionOnline for printing, you will be able to pick it up at the poster helpdesk on-site during the exhibition opening hours. The poster helpdesk is located in the Poster Loft.
Presenters must be present at their poster during the following times:

12:00 – 13:00 on Sunday, 12 May for posters with the below topics:
- Biomarkers and Biochemical Testing
- Bone Bioengineer, Regeneration and Implants
- Bone Biomechanics and Quality
- Bone Development/Growth and Fracture Repair
- Cancer and Bone
- Energy Metabolism, Fat, Diabetes, Nutrition
- Mammalian and Non-Mammalian Models, including Preclinical Imaging
- Muscle, Physical Activity and Bone
- Osteoporosis: Evaluation and Imaging
- Osteoporosis: Pathophysiology and Epidemiology

12:00 – 13:00 on Monday, 13 May for posters with the below topics:
- Osteoblasts and Bone Formation
- Osteoclasts and Bone Resorption
- Osteocytes and Mechanobiology
- Chondrocytes and Cartilage
- Endocrine Factors
- Genetics & Epigenetics
- Inflammation, Arthritis and Other Joint Diseases
- Osteoporosis: Treatment
- Other Diseases of Bone and Mineral Metabolism
- Paediatric Bone Diseases
- Rare Bone Diseases

If you have any questions regarding your poster(s), or presentation(s), please do not hesitate to contact the staff at the poster helpdesk, or the registration desk.

**Information for Chairpersons**

Please locate your session room in due time. We kindly ask you to be at your session room at least 15 minutes prior to the start of the session. We may remind you that speakers need to strictly observe the time schedule.
This event is supported, in part, by funding from the industry. All support is managed in strict accordance with CME/CPD accreditation criteria and standards for commercial support.

This section contains information that is promotional in nature, distinct from the scientific/educational elements of the main CME/CPD event.
THE EXPEDITION
Exploring our understanding of the methods to predict fracture risk reduction

Saturday 11 May
13:30–15:00
Bartók

Featuring an interactive faculty debate

Serge Ferrari
Geneva University Hospitals, Switzerland

Roland Chapurlat
Université de Lyon, France

Roland Baron
Harvard Medical School, USA

A UCB-sponsored satellite symposium.
This symposium is only open to healthcare professionals who are registered for the ECTS Congress.
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Sponsor names are in alphabetical order.

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Exhibitor and Supporter Company Profiles

Amgen (Europe) GmbH
Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its expertise to strive for solutions that improve health outcomes and dramatically improve people’s lives. A biotechnology pioneer since 1980, Amgen has grown to be one of the world’s leading independent biotechnology companies, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

For more information, visit www.amgen.com and follow us on www.twitter.com/amgen.

Biomedica
Biomedica provides internationally recognized, high quality ELISAs which are fully validated for clinical research. For specific markers Biomedica has become a world-wide market leader, e.g. Slerostin, DKK-1, free sRANKL and OPG, with a continuously growing portfolio.

Most assays are CE marked and ready-for-use in IVD. Biomedica uses serum-based calibrators and controls enabling researchers to collect biologically reliable data.

This year’s highlights: intact FGF23 ELISA, C-terminal FGF23 ELISA, and cancer and bone biomarker ELISAs

Partners and products: TAmiRNAs osteomiR™ kit, Fianostics’ FluoBolt™ assays.

Service measurements are available on request.

Visit us at Biomedica’s booth #12 for details.

www.bmgrp.com

BRUKER
Bruker-MicroCT develops and manufactures micro and nano-CT scanners both in vivo and ex vivo, with the highest resolution and imaging performance over both categories. In-vivo imaging with physiological monitoring is within proven safe dose limits. Our broad product line is founded on three decades at the leading edge of microtomography development. Scanners are supplied with comprehensive analysis software featuring high speed GPU reconstruction, versatile volume of interest selection tools, measurement of a long list of 3d and 2d parameters and customisable batch operations. In-depth bone research and morphometry support is provided. Bruker-MicroCT customers are closely supported by 27 distributors worldwide.
**European Calcified Tissue Society (ECTS)**

The European Calcified Tissue Society (ECTS) is the major organisation in Europe for researchers and clinicians working in the field of calcified tissues and related fields. For over 50 years the Society has acted as a forum to promote the highest levels of knowledge, research and education through its annual meetings, training courses and grants and awards. Membership of the ECTS is open to anyone working in the field at whatever stage in their career. Come and meet us in Budapest at our booth.

www.ectsoc.org

**Faxitron, a Hologic Company**

Faxitron, a Hologic company, is the pioneer and continues to be the most used brand in cabinet X-ray. Faxitron offers compact digital imaging and pre-clinical DEXA systems with the highest resolution (< 10μm) and the largest field of view in the market. These systems are less expensive, expose animals to lower doses, and offer faster results than microCT or 3D systems. Faxitron cabinets can be placed directly in the animal facility or surgical suite with no other shielding required.

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Gedeon Richter Plc., Budapest/Hungary, is a major pharmaceutical company in Central Eastern Europe, with an expanding direct presence in Western Europe, China and Latin America. Richter’s consolidated sales were approximately EUR 1.4 billion in 2018, reaching a market capitalisation of EUR 4.1 billion. Richter’s product portfolio covers many important therapeutic areas, including Women’s Healthcare and Central Nervous System. Richter is also active in biologic product development, and committed to bringing biosimilar products to global markets.

**International Federation of Musculoskeletal Research Societies (IFMRS)**

The IFMRS is an international, not for profit federation of musculoskeletal research societies. The IFMRS mission is to advance musculoskeletal research globally in order to prevent and treat musculoskeletal diseases by collaborating with international societies to share resources, raise public awareness and provide education.

New: HubLE

A unique knowledge environment for New Investigators

New: Education Working Group

To establish education projects fostering worldwide links between communities with a common interest in musculoskeletal research

New: Big Data Working Group

Knowledge Portal group to work on a collaborative project to set up a comprehensive NEW Big Data Portal – more to follow!

Join us on Stand 3a for an update our current activities.

Further information at www.ifmrs@ifmrs.org
Inozyme Pharma, Inc.
Inozyme Pharma is a biotechnology company developing novel medicines to treat rare disorders of calcification. These diseases are characterized by PPI imbalances, which lead to over-calcification of soft tissues and under-mineralization of bone. Founded in 2016, the company possesses a deep understanding of the biology of calcification which it uses to develop new medicines with the potential to drastically improve the standard-of-care and change treatment paradigms. Inozyme’s lead candidate is an enzyme replacement therapy designed to treat ENPP1 Deficiency (GACI type 1 and ARHR2) and ABCC6 Deficiency (GACI type 2 and PXE) for which insufficient treatment options currently exist.

International Conference on Children’s Bone Health (ICCBH)
ICCBH is your opportunity to hear about and discuss the newest developments in our understanding of paediatric bone health and disease.

We invite anyone with an interest in bone metabolism and bone mass in children, adolescents and young adults to attend. The ICCBH conference takes place every two years and is attended by up to 500 delegates from across the globe, making it truly multinational and multidisciplinary – a unique networking opportunity.

Come and participate in a lively interactive meeting with the leaders in the field! 9th International Conference on Children’s Bone Health (ICCBH) / 22-25 June 2019 / Salzburg, Austria
www.iccbh.org

Kyowa Kirin Services Ltd
Kyowa Kirin Services Ltd is a rapidly growing specialty pharmaceutical company focused on innovative medicines in rare diseases and therapeutic areas with high medical needs. Kyowa Kirin Services has business operations throughout Europe and the United States.

Kyowa Kirin Services is a wholly owned subsidiary of Japan-based Kyowa Hakko Kirin Co. Ltd., a leading research-based life sciences company with particular strength in antibody technologies for oncology, nephrology and immunology/allergy. Through its research and global commercialisation of innovative medicines, the company seeks to contribute to the health and wellbeing of people around the world.

PerkinElmer
PerkinElmer is a global leader committed to innovating for a healthier world. Our dedicated team is passionate about providing customers with an unmatched experience as they help solve critical issues especially impacting the diagnostics and discovery and analytical solutions markets. Our innovative detection, imaging, informatics, and service capabilities, combined with deep market knowledge and expertise, help customers gain earlier and more accurate insights to improve lives and the world around us.
Scanco Medical
Scanco Medical (www.scanco.ch) is the leading global provider of μCT and the only provider of HR-pQCT systems (XtremeCT). The range of scanners offer capabilities of obtaining images with sub-micron resolution from specimen scanners to 10 micron resolution from in vivo scanners. All systems are bundled with easy to use and comprehensive tools for Scan Acquisition, Image analyses (including Finite Element Analysis), Visualization and Archiving solutions. The micro-CT systems are bundled with high-performance workstations with large memory and data storage capabilities and optional GPU-based reconstruction solutions. Scanco also provides contract based scanning and analysis services for academic and industrial groups.

Stratec Medizintechnik
Stratec Medizintechnik is the world’s most successful producer of pQCT-based bone densitometry scanners. Results are presented in real density units (g/cm³). Additionally geometrical properties of bone can be analysed which allow the estimation of mechanical properties. The combined analysis of muscle and bone allows differentiation of disuse osteopenia from true osteoporosis.

The sister company Novotec Medical is manufacturer of Galileo vibration training devices for muscle stimulation and of Leonardo motion analysis systems (mechanography). The side alternating technology employs a natural movement similar to human gait. Improvement of muscle function, treatment of back pain and immobility are typical fields of application.

UCB BIOPHARMA
UCB, Brussels, Belgium is a global biopharmaceutical company focused on the discovery and development of innovative medicines and solutions to transform the lives of people living with severe diseases of the immune system or of the central nervous system. UCB has around 7 500 people in approximately 40 countries working with them.

UCONN Cryohistology Imaging Core
This core provides our experience with tape-capture of intact frozen sections of mineralized tissues followed by whole section imaging of the fluorescent and chromogenic signals emanating from the section. It has proven useful in imaging the accumulated mineral, fluorescent mineralization lines, AP and TRAP positive cells, and GFP, EdU and immunofluorescent signals all from the same section. This multimodal histological approach provides discriminating biological signals for interpreting injury/repair and transplantation models of skeletal tissues (long bone, calvaria, knee, TMJ and teeth) and computer-controlled high throughput trabecular static, dynamic and cellular histomorphometry that is particularly attractive for analyzing IMPC-produced KO mouse lines. These techniques can be contracted through the core and we offer hands-on training to laboratories that what to implement these methods.
World Osteoarthritis Day Intergenerational Events (WODIES)

The event promises an innovative programme tailored specifically to the general public. The objective of this public and free-of-charge event is to raise awareness and showcase means preventions, innovations and new advances in treatments around the condition and how it can affect us all. Participants will meet patients, researchers, associations and health care professionals to learn more about osteoarthritis and related illnesses. Listen, learn and live through the activities, sessions and debates. We will showcase the latest and most important information on osteoarthritis and related illnesses from leading experts in the field.
Corporate Satellite Symposia

Saturday, 11 May 2019

13:30 – 15:00  Satellite Symposium UCB BIOPHARMA
The Expedition: Exploring our Understanding of the Methods to Predict Fracture Risk Reduction

13:30 – 13:45  Clinical tools to assist goal-directed therapy for fragility fracture patients
   Serge Ferrari (Switzerland)

13:45 – 14:25  Debate
   Mass vs structure: Which measurement can help guide my patients’ therapy?
   Serge Ferrari (Switzerland)
   Roland Chapurlat (France)

14:25 – 14:50  How do cells translate drug effects into bone strength?
   Roland Baron (United States)

14:50 – 15:00  Looking to the future
   All, led by Serge Ferrari (Switzerland)
In conversation

Biosimilars in the future treatment of osteoporosis

Three KOL led sessions exploring benefits, experiences, guidelines and studies around biosimilar treatments in osteoporosis.

Monday 13 May 2019 | 14:45–16:15 | Bartók Rooms

We look forward to seeing you there.
Sunday, 12 May 2019

14:45 – 16:15 Satellite Symposium Amgen (Europe) GmbH Bartók
Putting Patient Care at the Forefront of Osteoporosis Management

14:45 – 14:50 Welcome and introduction
Serge Ferrari (Switzerland)
Péter Lakatos (Hungary)

14:50 – 15:15 Building long term therapy into patient management
Bente Langdahl (Denmark)

15:15 – 15:40 Real world data – impact on our understanding of osteoporosis treatment
Daniel Prieto-Alhambra (United Kingdom)

15:40 – 16:05 Individualising patient care to reach osteoporosis treatment goals
Serge Ferrari (Switzerland)

16:05 – 16:15 Q&A session and closing comments
Serge Ferrari (Switzerland)
Péter Lakatos (Hungary)

Monday, 13 May 2019

14:45 – 16:15 Satellite Symposium Gedeon Richter Plc Bartók
In Conversation: Biosimilars in the Future Treatment of Osteoporosis

14:45 – 14:55 Welcome and Introduction
Eugene McCloskey (United Kingdom)

14:55 – 15:15 Biosimilars in Rheumatology in the EU – Benefits, Experiences and Practices
Julie Maréchal-Jamil (Belgium)

15:15 – 15:45 Teriparatide in the Treatment Guidelines – Theory and Reality
Peyman Hadji (Germany)

15:45 – 16:00 RGB-010 Development – Concept and Results
István Takács (Hungary)

16:00 – 16:15 Q&A session and closing comments
# PUTTING PATIENT CARE AT THE FOREFRONT OF OSTEOPOROSIS MANAGEMENT

Sunday 12 May 2019, 14.45–16.15
Room Bartók, Budapest Congress Center, Budapest, Hungary

## PROGRAMME

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This symposium is only open to healthcare professionals who are registered for the ECTS 2019 Congress.
Opening Hours

**Registration Counter**

**Pre-Congress, Friday, 10 May 2019**

Pre-Congress delegates can pick up their name badges at the registration counter located in the entrance hall on Level 1 of the Budapest Congress Center on Friday, 10 May 2019, from 09:00 o’clock.

**Registration Counter**

The registration counter is located in the entrance hall on the first floor of the Budapest Congress Center and is open during the following times:

- Friday, 10 May 2019: 09:00 – 20:30
- Saturday, 11 May 2019: 07:00 – 20:00
- Sunday, 12 May 2019: 07:30 – 19:30
- Monday, 13 May 2019: 07:30 – 19:30
- Tuesday, 14 May 2019: 07:30 – 14:30

**Exhibition**

The Exhibition Area is located on Level 0 and is open during the following times:

- Saturday, 11 May 2019: 08:30 – 18:00
- Sunday, 12 May 2019: 09:00 – 18:00
- Monday, 13 May 2019: 09:00 – 18:00

**Speaker’s Media Center**

The speaker’s Media Center is located on Level 1, close to the registration desk, and is open during the following times:

- Friday, 10 May 2019: 08:30 – 19:00
- Saturday, 11 May 2019: 07:00 – 20:00
- Sunday, 12 May 2019: 07:30 – 19:30
- Monday, 13 May 2019: 07:30 – 19:30
- Tuesday, 14 May 2019: 07:30 – 14:00
Badges and Tickets

Each registered participant will receive a name badge upon arrival. For organisational and security reasons, we request that all participants and exhibitors wear their badges at all times during congress activities. Lost badges can be replaced at the registration desk at a cost of 10 € per badge (VAT included).

A barcode is printed on each name badge. This may be scanned by exhibitors/supporters to access your name, affiliation, country, email address and professional interests provided by you when registering for the congress. We would like to point out that this is entirely voluntary and not compulsory for the participation in corporate events. Delegates can refuse to be scanned at any time. By permitting an exhibitor or supporter to scan your badge, you agree that these details may be used by the company to contact you with relevant product information.

Badges will be colour-coded as follows:

| Invited Speaker |
| Organizer |
| ECTS Board |
| Exhibitor |
| Company Symposium Only |
| Staff |
| Delegate |

Please note that your delegate badge will also be your entrance ticket to the Networking Dinner. To be admitted to the Networking Dinner, you need to bring your delegate badge.
Congress App

Are you looking for additional information on the congress or ECTS? Download the ECTS Society App to access all relevant information on ECTS 2019!

The app allows you to:
• Access ECTS 2019 by clicking on the respective congress tile and pressing “install”
• Access the event programme, posters and speakers list
• Find your way around the congress with the interactive floor plan
• Create your own daily schedule that will guide you through the day
• Stay informed and receive the latest messages and news

New Interactive App Features

We are excited to introduce the following new interactive app features for selected sessions this year:

🤔 Ask a Question
This in-app function allows you to simply send in your question to the speaker during selected sessions using the app.

🌟 Rating
This new function enables you to rate your sessions by only one simple click through the app.

💬 Chat
You can now chat and connect with other attendees to form valuable connections at the congress.

Do you have any questions? Don't hesitate to contact us! ects2019@interplan.de

How to Download:

The easiest way to download our mobile app is to scan one of the following barcodes. Alternatively, you can also search for ‘ECTS’ in the Apple App Store or Google Play Store.

Scavenger Hunt

The ECTS invites you to participate in our second ever scavenger hunt for ECTS 2019. Take part in this activity and complete the challenge to get the chance to win a prize.

What do you have to do to participate?

1) Pick up your scavenger hunt pass at the ECTS booth situated on Level 0 in the exhibition area.

2) Visit the listed booths and get your pass stamped at each of them.

3) Hand in your completed pass, with a stamp from every stand, at the ECTS booth by 19:00 on Monday, 13 May and you will be entered into the ECTS Prize Draw with the following prizes:
   - 1st Place: FREE congress registration for ECTS 2020 in Marseille
   - 2nd Place: FREE ECTS Membership for 1 year
   - 3rd Place: One night’s hotel accommodation at the ECTS HQ Hotel during ECTS 2020

The winners will be announced at the Closing Ceremony.

Wi-Fi and Social Media

Wi-Fi

Complimentary Wi-Fi access will be available throughout the venue.
SSID: ECTS2019
Password: ECTS2019

Social Media

Twitter: You can view the ECTS Congress 2019 Twitter feed by clicking on the “News” button on the home screen of the app. To tweet from the app, click on “View on Twitter” at the bottom, your Twitter app will then open. Don’t forget to use the #ECTS2019 hashtag when you tweet!
Networking Programme
Official ECTS 2019 Events

Welcome Reception
Saturday, 11 May 2019
19:00 – 21:00 Mirror Corridor (in front of Pàtria Hall)

The Welcome Reception on Saturday evening is the place to connect with other experts, physicians and researchers from around the globe.

Please join us at this informal get-together to greet old friends, meet new colleagues, and exchange impressions of the Congress. Enjoy traditional Hungarian finger food in the casual atmosphere of the Budapest Congress Center.

Ticket: Included in Registration Fee

New Investigator Gathering
Sunday, 12 May 2019
19:00 – 20:00 in Lehár 1+2

Postdocs, PhD students and junior faculty staff are invited to gather together for the New Investigator Seminar, student presentations and a social gathering.

Light refreshments will be served in a relaxed and informal environment and delegates will have the opportunity to interact with other new investigators, as well as to meet with ECTS staff and members of the New Investigator Committee to discuss what the ECTS can do for YOU!

AHP Networking
Sunday, 12 May 2019
19:00 – 20:00 in the Poster Loft

Allied Healthcare Professionals (AHPs) are invited to gather together on Sunday evening. The networking session is structured as an informal poster tour. Posters of relevance to AHPs (and others) will be displayed and presented by the authors. The session provides an ideal opportunity for AHPs to discuss their own work and other research studies whilst enjoying light refreshments.
ECTS Charity Football Tournament

Sunday, 12 May 2019
20:00 – 22:00 at MOM Swimming Pool and Sports Center
Matches officially start at 20:30

Form a team and join the ECTS Charity **Football five-a-side tournament** with your friends and colleagues to help raise funds for the National Federation of Patients with Rare and Congenital Disorders.

This Fundraising Event is organized by the ECTS and ECTS Academy to bring together members, corporate supporters, and friends.

During the last couple of years, thanks to your support, we were able to support various local patient organizations. Let’s team up again this year to raise awareness and fundraise of rare and congenital bone diseases.

Ticket: Separate registration required.

Networking Dinner

Monday, 13 May 2019
20:00 – 24:00 at the Larus Restaurant and Event Center

Just a short 5-minute stroll away from the Budapest Congress Center, the Larus Restaurant and Event Center has an exceptional view of the Gesztenyés (Chestnut) park. It is an extraordinary place for focusing on communication and networking. With a relaxed atmosphere where both dancing and mingling are possible, it is the perfect place for an informal gathering open to all participants of the ECTS 2019 Congress. A casual buffet dinner provides an ideal opportunity to reconnect with old acquaintances or make new contacts.

Ticket: Delegate fee: EUR 45 per person incl. VAT
     Accompanying person’s fee: EUR 65 per person incl. VAT

Please note that your delegate badge will also be your entrance ticket to the Networking Dinner. To be admitted to the Networking Dinner, you need to bring your delegate badge.

*Sold out. If you still require a ticket, please check on-site at the registration desk to see if there have been any cancellations.*

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