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
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Welcome
Acknowledgement

ECTS thanks all Sponsors, Exhibitors and Partners for their support of the 49th European Calcified Tissue Society Congress 2022 in Helsinki.

For a full list of Sponsor, Exhibitors and Partners, please go to the Section Industry on page 91.
Welcome Message

Dear Colleagues,

Welcome to Helsinki!

It is a huge pleasure to wish you all welcome to ECTS 2022 – our first in-person congress since the start of the pandemic.

As you know, the ECTS vision is to advance science and build careers and networks for all members in the musculoskeletal field. As you will see, the congress will provide session recordings for on-demand access to all delegates, but we will enhance online components for live participation and discussions during the main programme sessions to facilitate participation for those unable to attend in person. Main programme sessions will therefore feature a third Chair to relay questions submitted online. On-site delegates can also enjoy our ancillary and educational programme.

If you are attending in person then rest assured that all session rooms, catering points, exhibition and other areas will be set up in accordance with the Finnish health and safety regulations. The Finnish management of the pandemic has been among the best in the world.

The Scientific Programme Committee has put together a varied programme that highlights the diversity of our field. We’ll be covering new technologies such as organ-on-chip approaches for basic and clinical science, diving into chronobiology, bone metabolism and sleep disturbances and exploring the latest insights in cranial defects for the clinician and basic scientist. The latest studies into disturbances in calcium and phosphate homeostasis will be reviewed and discussed as will the epidemiology, prevention and clinical management of osteoporosis. We will be discussing the latest news in the osteoclast field, skeletal angiogenesis, osteosarcoma and mechanobiology.

The long list of eminent main programme speakers includes Juleen Zierath (Switzerland), Christine Swanson (United States), Klara Sjögren (Sweden), Raj Thakker (UK), Rachel Gafni (United States), Carola Zillikens (Netherlands), Claudio Pedone (Italy), Elizabeth Zimmerman (Canada), Gretl Hendrickx (Belgium), Fernando Lecanda (Spain), Maya Kansara (Australia), Steve Twigg (UK), Pekka Vallittu (Finland), Serge Ferrari (Switzerland), Andries van der Meer (Netherlands), Edmond Young (Canada), Kent Soe (Denmark), Mei Wan (United States), Brent Richards (Canada), Nick Harvey (UK), Bente Langdahl (Denmark), Daniela Pfeiffer (Germany), and Amelia Moore (UK). In addition, the congress will offer a large educational and ancillary programme with additional expert speakers, many sessions planned in collaboration with other societies.
We are also looking hugely forward to the National Day organized by Outi Mäkitie, which will feature eminent speakers within population genetics, epidemiology, in vitro models and rare bone disease.

For the first time, the ECTS congress will offer two rather than one debate session so that in addition to the Clinical ECTS/ASBMR debate we will also be able to enjoy a Basic Science debate.

New this year, the Pre-Congress Day – not available online – will include Open Fora as enhanced Working Group programme. There will be a range of new topics and discussions, and I think there will be something for everyone enjoy. If you are familiar with the Working Groups then you will know the concept but we felt that the name might have kept some delegates from attending the sessions as it may signal invitation only, therefore the change of name.

A huge thank you to the Scientific Programme Committee and to ECTS and Interplan staff for making this congress possible and a warm welcome to sponsors, exhibitors, speakers and delegates.

Bo Abrahamsen
ECTS President and President of the 2022 Congress
Awards
Awards

AWARDEE WALL

The digital awardee wall will be positioned in the registration foyer of the 1st Floor and will display all award winners.

ECTS Grants and Awards

ECTS Steven Boonen Clinical Research Award

Saturday, 07 May 2022, 17:15 – 17:45, Auditorium 101, Award Winner: Juliet Compston (United Kingdom)

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 2022 Steven Boonen Award is supported by Amgen.

ECTS Philippe Bordier Clinical Award

Sunday, 08 May 2022, at 12:00, Awardee Wall, Award Winner: Barbara Obermayer-Pietsch (Austria)

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.
ECTS Iain T Boyle Award
Sunday, 08 May 2022, at 12:00, Awardee Wall,
Award Winner: Natasha Appelman-Dijkstra (Netherlands)

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.

ECTS Mike Horton Basic/Translational Award
Sunday, 08 May 2022, at 12:00, Awardee Wall,
Award Winner: Ulf H. Lerner (Sweden)

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.

ECTS Fellowship
Monday, 09 May 2022, at 12, Awardee Wall,
Award Winners: Federica Scotto di Carlo (Italy) and Syazrah Salam (United Kingdom)

ECTS is presenting this year two one-year fellowships 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.

ECTS Excellence in Research Award
Monday, 9 May 2022, 08:00 – 08:25, Auditorium 103,
Award Winner: Kent Søe (Denmark)

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.
ECTS 2022 Abstract and Congress Awards

ECTS-Bone Reports New Investigator Awards
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101
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 based on abstract scores.

The ECTS-Bone Reports New Investigator Awards are supported by Elsevier

ECTS-ICCBH New Investigator Awards
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101
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 based on abstract scores.

The ECTS-ICCBH New Investigator Awards are supported by International Conference on Children’s Bone Health (ICCBH)

ECTS Central Eastern Europe Travel Award
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101
The ECTS CEE Award was established to encourage early career scientists and MDs resident in a Central Eastern European Country to present a poster during the ECTS Annual Congress. The award winners were selected based on abstract scores.

ECTS Travel Awards
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101
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 based on abstract scores.
ECTS East-meets-West Research Award
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101

As part of the East-Meets-West programme, ECTS will award the top three highest ranking abstracts submitted from China, Japan and Korea. 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).

ECTS Academy Poster Focus Award
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101

Two awards are available for New Investigators presenting during the Poster Focus session. These awards are organised by the ECTS Academy and supported by Nestle Nutrition a division of Nestlé Enterprise S.A

ECTS Academy New Investigator Seminar Award
Tuesday, 10 May 2022, 13:45 – 14:30, Auditorium 101

Organised by the ECTS Academy, this award will reward the best presentation from NI Seminar. This award is supported by Nestle Nutrition a division of Nestlé Enterprise S.A
Print Date: 8 April 2022

Changes might occur. We strongly advise to refer to the online programme and conference app for the most up to date programme.

You can follow the QR codes to access the online programme.

All sessions with this item will be live streamed to the online congress platform and will be available on demand after the congress.

Check out the ECTS booth and join the community.

Download the ECTS App: sessions, speakers, exhibition and so much more all at your fingertips.

Wifi:
SSID: ECTS2022
Password: ECTS2022

Follow our hashtag #ECTS2022 and tune in for the latest updates on the conference.
Programme Overview

Friday, 06 May 2022
please note that all times are EEST

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Workshop: FishBone: Zebrafish model to study common and rare genetic skeletal diseases
ECTS-Mellanby Training Course: Bone Turnover Markers
National Day
ECTS – ICCBH Workshop

Lunch Break

ECTS-ERA Workshop: FGF23: The kidney and bone connection
ECTS-Mellanby Training Course: Bone Turnover Markers
National Day
ECTS – ICCBH Workshop

Coffee Break

Open Forum: Animal Models: “Omics” of bone cells (ECTS Academy)
ECTS-Mellanby Training Course: Bone Turnover Markers
Open Forum: Bone marrow adiposity (joint ECTS-BMAS)

Coffee Break

Open Forum: Osteoimmunology-Effect of inflammation and infection on osteoclasts
ECTS-Mellanby Training Course: Bone Turnover Markers
Open Forum: Mechno-transduction in bone development

Clinical/Public Health  Basic/Translational  Clinical & Basic  New Investigators
Programme Overview

ECTS-ISBM Workshop: Spatial organisation of bone marrow niches during homeostasis and disease

Workshop: ECTS – FFN workshop on the management and prevention of fractures among frail subjects in the post-COVID period

Lunch Break

ECTS-CABS Workshop: Novel Targets in Cancer Bone Disease

ECTS-ORS Workshop: Proceedings in Orthopedic Bone Research

Coffee Break

Open Forum: Histomorphometry (ECTS Academy)

Open Forum: Osteoarthritis and Bone

Open Forum: Diabetes and bone

Open Forum: Clinical/Translational imaging

Open Forum: PTH and Vitamin D3
## Programme Overview

**Saturday, 07 May 2022**

Please note that all times are EEST

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<th>Time</th>
<th>Auditorium 101</th>
<th>Auditorium 103</th>
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<td>08:00</td>
<td>Welcome remarks</td>
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<td>08:30</td>
<td>Clinical Update 1: Do not miss these studies</td>
<td>Basic Science Update 1: Bone Biology update</td>
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<td>Coffee Break / Posters Exhibition / Industry Exhibition</td>
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<td>10:30</td>
<td>Clinical Update 2: Jumping the pipeline – repurposing existing drugs</td>
<td>Basic Science Update 2: Technology – Imaging modalities to visualize vasculature in bone</td>
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<td>11:00</td>
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<td>ECTS Annual General Meeting</td>
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<td>15:00</td>
<td>Opening Ceremony</td>
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<td>15:30</td>
<td>New ECTS Clinical Practice Guidelines</td>
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<td>16:00</td>
<td>Plenary Symposium 1: What is New (WIN)?</td>
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<td>Steven Boonen Award Lecture</td>
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<td>18:00</td>
<td>ECTS-ASBMR Debate: This House believes that bisphosphonates lower cardiovascular risk</td>
<td>Basic Science Debate: This House Believes that Human 3D Cells Models should be used instead of Conditional Knock Out Models</td>
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<td>19:00</td>
<td>Welcome Reception</td>
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PhD Training Course

4-7 July 2022 • Valbonne International Center, Nice, France
www.ectsoc.org

Aims and Learning Outcomes

The aims of the course are:

• to promote knowledge about physiology and pathology of bone and calcium metabolism
• to promote knowledge about methods in bone research
• to promote networking between European PhD students in the bone field

At the end of the course, the PhD student should be able to:

• Understand bone biology, the interaction and communication between bone and other tissues, transcripational control of bone cells and bone cell signaling
• Have knowledge of mechanical stimulation and regenerative medicine on bone
• Have knowledge of bone marrow niches in health and cancer
• Understand the effects of inflammation, nutrition and microbiota on bone
• Have knowledge of the cutting edge technology
• Be able to present and discuss their PhD project

Registration fee €450 for ECTS Members (includes meals and accommodation)
### Programme Overview

**Sunday, 08 May 2022**

Please note that all times are EEST.

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<tr>
<th>Time</th>
<th>Auditorium 101</th>
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<tr>
<td>08:00</td>
<td>Concurrent Symposium 1: Clinical/Public Health</td>
<td>Concurrent Symposium 1: Basic/Translational – Recent advances in osteosarcoma</td>
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<td>Concurrent Oral Presentations 1: Clinical/Public Health: Frailty, Osteoporosis and Sarcopenia</td>
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<td>Plenary Symposium 2: Insights from Outside – Organ-on-Chips: New tools for bone?</td>
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<td>Online Coffee shop: Organ-on-Chips</td>
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<td>Educational Symposium: How to overcome research barriers on rare bone conditions</td>
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<td>Meet-the-Expert: OoC/microfluidics/shear stress</td>
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**Legend:**
- Clinical/Public Health
- Basic/Translational
- Clinical & Basic
- Industry Sponsored Sessions
- New Investigators
- AHP Sessions
- Online Coffee Shops (for online attendees only)
Programme Overview

Monday, 09 May 2022
please note that all times are EEST

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<th>Time</th>
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<tr>
<td>08:00</td>
<td>Concurrent Symposium 2: New insights into disturbances in calcium and phosphate homeostasis</td>
<td>Concurrent Symposium 2: Osteoclasts</td>
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<td>Concurrent Oral Presentations 2: Clinical/Public Health: Rare Bone Diseases</td>
<td>Concurrent Oral Presentations 2: Basic/Translational: Mechanisms involved in bone fragility</td>
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<td>Plenary Symposium 3: Cranial defects and repair</td>
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<td>Lunch Break / Poster Exhibition / Industry Exhibition</td>
<td>Online Coffee Shop: Cranial defects and repair</td>
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<tr>
<td>15:00</td>
<td>New Data Abstracts</td>
<td>Meet-the-ECTS Committees</td>
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<td>17:00</td>
<td>Plenary Oral Presentations 2: Insights in osteoporosis treatments and metabolism</td>
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<td>18:00</td>
<td>Concurrent Oral Poster Presentations 2: Clinical/Public Health</td>
<td>Concurrent Oral Poster Presentations 2: Basic/Translational</td>
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Clinical/Public Health  Basic/Translational  Clinical & Basic  Industry Sponsored Sessions  ECTS Events  New Investigators  Online Coffee Shops
**ECTS 2022**

**Final Programme**

**Programme Overview**

- Auditorium 101
- Auditorium 103
- 205 206 207
- 208 209 216  
  **Poster Loft**

**08:00**
- Concurrent Symposium 2: New insights into disturbances in calcium and phosphate homeostasis

**08:30**
- Concurrent Oral Presentations 2: Clinical/Public Health: Rare Bone Diseases

**09:00**
- Concurrent Oral Presentations 2: Basic/Translational: Mechanisms involved in bone fragility

**09:30**
- Coffee Break / Poster Exhibition / Industry Exhibition

**11:00**
- Plenary Symposium 3: Cranial defects and repair

**12:00**
- Lunch Break / Poster Exhibition / Industry Exhibition

**12:30**
- Online Coffee Shop: Cranial defects and repair Poster Forum

**13:00**
- Meet-the-Expert: Bone-muscle cross talk
- Meet-the-Expert: Meet the rheumatologist: Identification and management of patients with inflammatory causes of bone disease in the bone clinic
- Meet-the-Expert: Mechanobiology of fracture resistance
- Meet-the-Expert: How should I manage the skeletal health of patients after weight loss surgery?
- Meet-the-Expert: Research needs in osteoporosis in this decade
- ECTS-IFMRS Joint Session

**13:30**
- New Data Abstracts Meet-the-ECTS Committees

**15:00**
- Coffee Break / Poster Exhibition / Industry Exhibition

**15:30**
- Plenary Oral Presentations 2: Insights in osteoporosis treatments and metabolism

**17:00**
- Concurrent Oral Poster Presentations 2: Clinical/Public Health

**18:00**
- Concurrent Oral Poster Presentations 2: Basic/Translational

**19:00**
- NI Seminar & Gathering
## Programme Overview

**Tuesday, 10 May 2022**

Please note that all times are EEST.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Concurrent Symposium 3: Advances in clinical bone imaging</td>
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<tr>
<td>08:30</td>
<td>ConCurrent Symposium 3: Mechanobiology</td>
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<tr>
<td>09:00</td>
<td>Concurrent Oral Presentations 3: Clinical/Public Health: Management of Osteoporosis and Metabolic Bone Disease</td>
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<tr>
<td>09:30</td>
<td>Concurrent Oral Presentations 3: Basic/Translational: Mesenchymal stem cells, chondrocytes and osteoblasts</td>
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<tr>
<td>10:00</td>
<td>Coffee Break</td>
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<tr>
<td>10:30</td>
<td>Plenary Symposium 4: Genetics and epidemiology of bone strength and fracture risk</td>
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<tr>
<td>11:30</td>
<td>Coffee Break</td>
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<tr>
<td>12:00</td>
<td>Big Clinical Session: Long term strategy for osteoporosis patient management</td>
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<tr>
<td>12:30</td>
<td>Big Basic Science Session: Liquid biopsies to identify circulating cells related to bone metabolism and metastases</td>
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<tr>
<td>13:00</td>
<td>Plenary Oral Presentations 3: Rare bone diseases – mechanisms and interventions</td>
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<tr>
<td>13:30</td>
<td>Plenary Oral Presentations 3: Rare bone diseases – mechanisms and interventions</td>
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<tr>
<td>14:00</td>
<td>Awards Ceremony &amp; Closing</td>
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<tr>
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<td>Awards Ceremony &amp; Closing</td>
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<tr>
<td>15:00</td>
<td>Awards Ceremony &amp; Closing</td>
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</tbody>
</table>

*Clinical/Public Health*  *Basic/Translational*  *Clinical & Basic*  *ECTS Events*
# Programme Overview

**Friday, 06 May 2022**

Please note that all times are EEST.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Lunch Break</td>
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<tr>
<td>10:00</td>
<td>National Day</td>
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<tr>
<td>11:00</td>
<td>Workshop: FishBone: Zebrafish model to study common and rare genetic skeletal diseases</td>
</tr>
<tr>
<td>11:00</td>
<td>ECTS-Mellanby Training Course: Bone Turnover Markers</td>
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<tr>
<td>11:00</td>
<td>ECTS – ICCBH Workshop</td>
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<tr>
<td>11:30</td>
<td>Lunch Break</td>
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<tr>
<td>14:00</td>
<td>ECTS-ERA Workshop: FGF23: The kidney and bone connection</td>
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<tr>
<td>15:00</td>
<td>National Day</td>
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<tr>
<td>15:00</td>
<td>ECTS – ICCBH Workshop</td>
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<td>15:30</td>
<td>Coffee Break</td>
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<tr>
<td>17:00</td>
<td>Open Forum: Animal Models: “Omics” of bone cells (ECTS Academy)</td>
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<tr>
<td>17:00</td>
<td>ECTS-Mellanby Training Course: Bone Turnover Markers</td>
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<tr>
<td>17:00</td>
<td>Open Forum: Bone marrow adiposity (joint ECTS-BMAS)</td>
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<td>18:00</td>
<td>Coffee Break</td>
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<tr>
<td>19:00</td>
<td>Open Forum: Osteoimmunology - Effect of inflammation and infection on osteoclasts (Academy Synergy)</td>
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<tr>
<td>20:00</td>
<td>Open Forum: Mechanotransduction in bone development</td>
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</tbody>
</table>

Legend:
- Clinical/Public Health
- Basic/Translational
- Clinical & Basic
- New Investigators
Pre-Congress, Friday
06 May 2022

08:30
ECTS-ISBM Workshop:
Spatial organisation of bone marrow niches during homeostasis and disease

09:00
ECTS-Mellanby Training Course:
Bone Turnover Markers

10:00
Workshop: FishBone:
Zebrafish model to study common and rare genetic skeletal diseases

11:00
ECTS – ICCBH Workshop:
spatial organisation of bone marrow niches during homeostasis and disease

11:30
ECTS-Mellanby Training Course:
Bone Turnover Markers

12:00
National Day

12:30
Workshop: ECTS – FFN workshop on the management and prevention of fractures among frail subjects in the post-COVID period

13:00
ECTS-ERA Workshop:
FGF23: The kidney and bone connection

13:30
ECTS-CABS Workshop:
Novel Targets in Cancer Bone Disease

14:00
ECTS-ORS Workshop:
Proceedings in Orthopedic Bone Research

14:30
Open Forum:
Animal Models: "Omics" of bone cells

15:00
ECTS-Mellanby Training Course:
Bone Turnover Markers

15:30
Open Forum:
Bone marrow adiposity (joint ECTS-BMAS)

16:00
Coffee Break

16:30
Open Forum:
Histomorphometry (ECTS Academy)

17:00
Open Forum:
Osteoarthritis and Bone

17:30
Open Forum:
Mechano-transduction in bone development

18:00
Open Forum:
Diabetes and bone

18:30
Open Forum:
Osteoimmunology - Effect of inflammation and infection on osteoclasts

19:00
Open Forum:
Clinical/Translational imaging

20:00
Open Forum:
PTH and Vitamin D3

20:30
Open Forum:
Academy Synergy

21:00

Pre-Congress ECTS 2022

Friday, 06 May 2022

For session details on pre-congress session please see the online programme on the congress website or in the congress app

10:00 – 13:00 National Day
Meeting Room 207
Chairs: Outi Mäkitie (Finland)
Hanna Taipaleenmaki (Germany)
Heikki Allan Koistinen (Finland)

13:00 – 14:00 Lunch Break

14:00 – 16:00 National Day
Meeting Room 207
Chairs: Outi Mäkitie (Finland)
Tuomas Näreoja (Finland)
Saila Laakso (Finland)

11:00 – 13:00 Workshop: FishBone:
Meeting Room 205
Zebrafish model to study common and rare genetic skeletal diseases
Chairs: Antonella Forlino (Italy)
Erika Kague (United Kingdom)

Supported by educational grant from industry

11:00 – 13:00 ECTS-Mellanby Training Course:
Meeting Room 206
Bone Turnover Markers
Chairs: Richard Eastell (United Kingdom)
Kaisa Ivaska (Finland)

Supported by educational grant from industry

13:00 – 13:30 Lunch Break
14:00 – 16:00  **ECTS-Mellanby Training Course:**  
**Bone Turnover Markers**  
_Chairs: Richard Eastell (United Kingdom)_  
_Kaisa Ivaska (Finland)_  

_Supported by educational grant from industry_

Meeting Room 206

16:00 – 16:30  Break

16:30 – 18:00  **ECTS-Mellanby Training Course:**  
**Bone Turnover Markers**  
_Chairs: Richard Eastell (United Kingdom)_  
_Kaisa Ivaska (Finland)_  

_Supported by educational grant from industry_

Meeting Room 206

11:00 – 13:00  **ECTS – ICCBH Workshop**  
_Chairs: Natasha Appelman-Dijkstra (Netherlands)_  
_Nick Bishop (United Kingdom)_  

_Supported by educational grants from industry_

Meeting Room 208

13:00 – 14:00  Lunch Break

14:00 – 16:00  **ECTS – ICCBH Workshop**  
_Chairs: Natasha Appelman-Dijkstra (Netherlands)_  
_Nick Bishop (United Kingdom)_  

_Supported by educational grants from industry_

Meeting Room 208
11:00 – 13:00  **ECTS-ISBM Workshop:**
Spatial organisation of bone marrow niches during homeostasis and disease
*Chairs: Christa Maes (Belgium)*
  *Thomas Levin Andersen (Denmark)*

Meeting Room 209

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11:00 – 12:30  **Workshop: ECTS – FFN workshop**
on the management and prevention of fractures among frail subjects in the post-COVID period
*Chairs: Mattias Lorentzon (Sweden)*
  *James Bernard Walsh (Ireland)*

Meeting Room 216

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13:00 – 14:00  Lunch Break

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14:00 – 16:00  **ECTS-ERA Workshop:**
FGF23: The kidney and bone connection
*Chairs: Martine Cohen-Solal (France)*
  *Morten Frost (Denmark)*

Meeting Room 205

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14:00 – 16:00  **ECTS-CABS Workshop: Novel Targets in Cancer Bone Disease**
*Chairs: Anna Maria Teti (Italy)*
  *Cyrille Confavreux (France)*

Meeting Room 209
14:00 – 16:00  | **ECTS-ORS Workshop:** Proceedings in Orthopedic Bone Research  
               | *Chairs: Melanie Haffner-Luntzer (Germany) Björn Busse (Germany)*  
               | Meeting Room 216

16:00 – 16:30  | Break

16:30 – 18:30  | **Open Forum: Animal Models:** “Omics” of bone cells  
               | *Chairs: Ciro Menale (Italy) Ulrike Baschant (Germany)*  
               | organized by ECTS Academy  
               | Meeting Room 205

16:30 – 18:30  | **Open Forum: Bone marrow adiposity (joint ECTS-BMAS)**  
               | *Chairs: Bram Van der Eerden (Netherlands) Annegreet Vlug (Netherlands)*  
               | Meeting Room 208

16:30 – 18:30  | **Open Forum: Histomorphometry**  
               | *Chairs: Petar Milovanovic (Serbia) Katharina Jähn-Rickert (Germany)*  
               | organized by ECTS Academy  
               | Meeting Room 215

16:30 – 18:30  | **Open Forum: Osteoarthritis and Bone**  
               | *Chairs: Willem Lems (Netherlands) Barbara Hauser (United Kingdom)*  
               | Meeting Room 216

18:30 – 18:45  | Break
18:45 – 20:45  **Open Forum: Osteoimmunology**
- Effect of inflammation and infection on osteoclasts
  *Chairs: Claudine Blin (France)*
  *Kent Søe (Denmark)*
  Meeting Room 205

18:45 – 20:45  **Academy Synergy**
  *Chairs: Ciro Menale (Italy)*
  *Annegreet Vlug (Netherlands)*
  Meeting Room 207

18:45 – 20:45  **Open Forum: Mechano-transduction in bone development**
  *Chairs: Andrei Chagin (Sweden)*
  *Sara Windahl (Sweden)*
  Meeting Room 208

18:45 – 20:45  **Open Forum: Diabetes and bone**
  *Chairs: Andrea Palermo (Italy)*
  *Elena Tsourdi (Germany)*
  Meeting Room 209

18:45 – 20:45  **Open Forum: Clinical/Translational imaging**
  *Chairs: Klaus Engelke (Germany)*
  *Björn Busse (Germany)*
  Meeting Room 215

*Supported by educational grant from industry*
18:45 – 20:45 Open Forum: PTH and Vitamin D3

Chairs: Cristiana Cipriani (Italy)
Jessica Pepe (Italy)

Supported by educational grant from industry
ECTS Congress 2022
Saturday, 07 May – Tuesday, 10 May 2022

Floor Plan

2nd Floor

1st Floor

* only on Tuesday 10 May, 2022
Programme Overview

Saturday, 07 May 2022

please note that all times are EEST
Scientific Programme

Saturday, 07 May 2022

08:10 – 08:30 Welcome Remarks
Welcome: President’s Address
Bo Abrahamsen (Denmark)

08:30 – 10:00 Clinical Update 1: Do not miss these studies
Chairs: Martine Cohen-Solal (France)
        James Bernard Walsh (Ireland)
Chair Live Stream: Barbara Hauser (United Kingdom)
08:30 – 09:05 Key clinical papers of the year
         Richard Eastell (United Kingdom)
09:05 – 09:40 Clinical highlights of the ECTS 2022 meeting
         Elena Tsourdi (Germany)
09:40 – 10:00 Discussion

08:30 – 10:00 Basic Science Update 1: Bone Biology update
Chair: Michaela Tencerová (Czech Republic)
Chair Live Stream: Donata Iandolo (France)
08:30 – 09:05 Models for endochondral ossification
         Eric Farrell (Netherlands)
09:05 – 09:40 Embryology, mechanical loading and OA
         Andrew Pitsillides (United Kingdom)
09:40 – 10:00 Discussion

10:00 – 10:30 Coffee Break / Poster Exhibition / Industry Exhibition
10:30 – 11:30 **Clinical Update 2:**

**Jumping the pipeline – repurposing existing drugs**

*Chairs: Saila Laakso (Finland)  
Polyzois Makras (Greece)*

*Chair Live Stream: Annegreet Vlug (Netherlands)*

10:30 – 10:55 Repurposing osteoporosis drugs for other diseases

*Polyzois Makras (Greece)*

10:55 – 11:00 Discussion

11:00 – 11:25 Repurposing non-bone drugs for the skeleton

*Coen Netelenbos (Netherlands)*

11:25 – 11:30 Discussion

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10:30 – 11:30 **Basic Science Update 2:**

**Technology – Imaging modalities to visualize vasculature in bone**

*Chairs: Björn Busse (Germany)  
Jan Tuckermann (Germany)*

*Chair Live Stream: Natalie C Butterfield (United Kingdom)*

10:30 – 10:55 Imaging modalities to visualize vasculature in bone with synchrotron radiation felicity

*Françoise Peyrin (France)*

10:55 – 11:00 Discussion

11:00 – 11:25 Emerging techniques to measure bone health in vivo.

*Julie Greeves (United Kingdom)*

11:25 – 11:30 Discussion

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11:30 – 12:30 **ECTS Annual General Meeting**

*Auditorium 101*

12:30 – 13:30 Lunch Break / Poster Exhibition / Industry Exhibition
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<tbody>
<tr>
<td>13:30 – 14:30</td>
<td>Industry Sponsored Session</td>
<td>Auditorium 103</td>
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<td>14:30 – 15:00</td>
<td>Coffee Break / Poster Exhibition / Industry Exhibition</td>
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<td>15:00 – 15:30</td>
<td>Opening Ceremony</td>
<td>Auditorium 101</td>
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<td>15:00 – 15:15</td>
<td>President’s Welcoming Remarks</td>
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<td>15:15 – 15:30</td>
<td>Local Organising Committee Chair’s Welcoming Remarks</td>
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<td>15:30 – 16:00</td>
<td>New ECTS Clinical Practice Guidelines</td>
<td>Auditorium 101</td>
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<td>15:30 – 15:45</td>
<td>Bariatric surgery and skeletal health: a narrative review and position statement</td>
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<td>15:45 – 16:00</td>
<td>Osteonecrosis of the jaw and antiresorptive agents in benign and malignant diseases: a critical review</td>
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<td>16:00 – 17:00</td>
<td>Plenary Symposium 1: What is New (WIN)?</td>
<td>Auditorium 101</td>
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<td>Chronobiology &amp; Clock genes and their relevance to musculoskeletal health</td>
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<td><em>Chairs:</em> Hanna Taipaleenmaki (Germany)</td>
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<td><em>Elizabeth Winter (Netherlands)</em></td>
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<td><em>Chair Live Stream:</em> Steve Stegen (Belgium)</td>
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<td>16:00 – 16:25</td>
<td>Basic/Translational Update: Circadian rhythms and exercise – re-setting the clock in metabolic disease</td>
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<td><em>Juleen Zierath (Sweden)</em></td>
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<td>16:25 – 17:00</td>
<td>Discussion</td>
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<td>16:30 – 16:55</td>
<td>Clinical Update: New insights on the influence of sleep and circadian biology on skeletal health</td>
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<td><em>Christine Swanson (United States)</em></td>
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<td>16:55 – 17:00</td>
<td>Discussion</td>
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<td>17:15 – 17:45</td>
<td>Steven Boonen Award Lecture</td>
<td>Auditorium 101</td>
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<td><em>Chair: Barbara Obermayer-Pietsch (Austria)</em></td>
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<td>17:15 – 17:45</td>
<td>GLOW: Casting light on osteoporosis</td>
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<td><em>Juliet Compston (United Kingdom)</em></td>
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**ECTS-ASBMR Debate:**

**This House believes that bisphosphonates lower cardiovascular risk**

*Chairs:*  
Bo Abrahamsen (Denmark)  
Juliet Compston (United Kingdom)

*Chair Live Stream:*  
Andrea Burden (Switzerland)

**17:50 – 17:55**  
Introduction by the chairs and vote

**17:55 – 18:10**  
Debate: For the motion  
*Serge Ferrari* (Switzerland)

**18:10 – 18:25**  
Debate: Against the motion  
*Ian Reid* (New Zealand)

**18:25 – 18:35**  
Comments and questions from the audience

**18:35 – 18:45**  
Rebuttal

**18:45 – 18:50**  
Vote (via the congress app)

**18:50 – 19:05**  
Debate closed

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**Basic Science Debate:**

**This House Believes that Human 3D Cells Models should be used instead of Conditional Knock Out Models**

*Chairs:*  
Anna Maria Teti (Italy)  
Laurence Vico (France)

*Chair Live Stream:*  
Natalie C Butterfield (United Kingdom)

**17:50 – 18:00**  
Introduction by the chairs and vote

**18:00 – 18:15**  
For the motion: Human (3D) cell models – 3Rs  
*Liam Grover* (United Kingdom)

**18:15 – 18:30**  
Against the motion: Conditional KO mice  
*Florent Elefteriou* (United States)

**18:30 – 18:40**  
Comments and questions from the audience

**18:40 – 18:50**  
Rebuttal

**18:50 – 18:55**  
Vote (via the congress app)

**18:55 – 19:05**  
Debate closed
NEW INVESTIGATOR NETWORKING GROUP

AIMS: Keep the community connected and support career development

TARGET AUDIENCE: Early-career clinical and basic researchers with focus on paediatric bone health from anywhere in the world

CONTACT: iccbh-ni@googlegroups.com

ICCBH

10TH INTERNATIONAL CONFERENCE ON CHILDREN’S BONE HEALTH
2-5 JULY 2022
DUBLIN, IRELAND

LAST MINUTE ABSTRACTS DEADLINE: Monday 9 May 2022

EDUCATIONAL COURSE ON PAEDIATRIC BONE HEALTH AND RARE BONE DISEASES

ICCBH Bone School
30 JUNE - 1 JULY 2022
DUBLIN, IRELAND

Who should attend?
Clinical paediatric, adult and endocrine trainees and fellows with an interest in bone disease
Clinical and translational researchers

3rd INTERNATIONAL SYMPOSIUM ON MUSCLE-BONE INTERACTION IN DUCHENNE MUSCULAR DYSTROPHY

ONLINE MEETINGS:
3 & 14 NOVEMBER 2022
17:00-20:00 GMT

Registration and further details: www.dmdmusclebone.org.

AWARD WINNER

Maria Luisa Bianchi Award Winner

Congratulations to Aashima Dabas, from New Delhi, India, winner of the first ICCBH Maria Luisa Bianchi Award for a female working to improve bone health in children in a low or middle income country. Aashima will be presented with her award in Dublin at ICCBH.

A collaboration between World Duchenne Organization and International Conference on Children’s Bone Health

EDUCATIONAL COURSE ON PAEDIATRIC BONE HEALTH AND RARE BONE DISEASES

OI2022

14TH INTERNATIONAL CONFERENCE ON OSTEOGENESIS IMPERFECTA

30 AUGUST - 2 SEPTEMBER 2022
SHEFFIELD, UK

EARLYBIRD REGISTRATION DEADLINE: FRIDAY 27 MAY 2022
LAST MINUTE ABSTRACTS DEADLINE: MONDAY 13 JUNE 2022

www.o12022.org

For further information please see www.iccbh.org or email us at iccbh@ectsoc.org
Programme Overview

Sunday, 08 May 2022
please note that all times are EEST

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium 101</th>
<th>Auditorium 103</th>
<th>205</th>
<th>206</th>
<th>207</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Concurrent Symposium 1: Clinical/Public Health p. 40</td>
<td>Concurrent Symposium 1: Basic/Translational – Recent advances in osteosarcoma p. 40</td>
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<tr>
<td>08:30</td>
<td>Concurrent Oral Presentations 1: Clinical/Public Health: Frailty, Osteoporosis and Sarcopenia p. 41</td>
<td>Concurrent Oral Presentations 1: Basic/Translational: Pathways inducing bone diseases p. 41</td>
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<td>12:00: Named Awards Ceremony at Awardee Wall p. 42</td>
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<td>Online Coffee shop: Organ-on-Chips p. 42</td>
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<td>Educational Symposium: How to overcome research barriers on rare bone conditions p. 43</td>
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<td>Meet-the-Expert: OoC/microfluidics/shear stress p. 43</td>
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Sunday 08 May 2022

08:00

Coffee Break / Poster Exhibition / Industry Exhibition

08:30

Nurses & Allied Health Professionals (AHP) Seminar

09:00

Concurrent Oral Presentations 1: Clinical/Public Health: Frailty, Osteoporosis and Sarcopenia

Concurrent Oral Presentations 1: Basic/Translational: Pathways inducing bone diseases

09:30

Coffee Break / Poster Exhibition / Industry Exhibition

10:00

Plenary Symposium 2: Insights from Outside – Organ-on-Chips: New tools for bone?

11:00

12:00: Named Awards Ceremony at Awardee Wall

Lunch Break / Poster Exhibition / Industry Exhibition

12:30

Online Coffee shop: Organ-on-Chips Lunch Break / Poster Exhibition / Industry Exhibition Poster Forum

13:00

Nurses & Allied Health Professionals (AHP) Seminar 2

13:30

Educational Symposium: How to overcome research barriers on rare bone conditions

Meet-the-Expert: OoC/microfluidics/shear stress

Meet-the-Expert: Meet the endocrinologist

Meet-the-Expert: How can health economics help us deliver better patient care in the musculoskeletal area

14:00

14:30

Industry Satellite Symposium

15:00

15:30

Coffee Break / Poster Exhibition / Industry Exhibition

16:00

16:30

Plenary Oral Presentations 1: Current and novel factors in bone diseases

17:00

17:30

Concurrent Oral Poster Presentations 1: Clinical/Public Health

Concurrent Oral Poster Presentations 1: Basic/Translational

18:00

18:30

19:00

NI Mentoring Session Mini Symposium

19:30

20:00

ECTS 2022 Faculty Reception

20:30

21:00

By Invitation Only
Scientific Programme

Sunday, 08 May 2022

08:00 – 09:00 Concurrent Symposium 1: Clinical/Public Health Auditorium 101
Nutritional strategies for maintaining muscle mass and strength from middle age to later life – microbiome, vitamins and beyond
Chairs: Gustavo Duque (Australia) Julie Greeves (United Kingdom)
Chair Live Stream: Ursula Heilmeier (Germany)

08:00 – 08:30 Can we modify microbiome to improve bone health? Klara Sjögren (Sweden)

08:30 – 09:00 Nutritional strategies for maintaining muscle and preventing falls and falls-related fractures from middle age to later life – vitamins and beyond Claudio Pedone (Italy)

08:00 – 09:00 Concurrent Symposium 1: Basic/Translational Auditorium 103
Recent advances in osteosarcoma – Jointly organised with the Cancer & Bone Society (CABS) –
Chairs: Federica Scotto di Carlo (Italy) Thomas Levin Andersen (Denmark)
Chair Live Stream: Hanna Taipaleenmaki (Germany)

08:00 – 08:30 Determinants of Osteosarcoma lung metastases Fernando Lecanda (Spain)

08:30 – 09:00 Immunotherapies and osteosarcoma Maya Kansara (Australia)
09:00 – 11:00  Nurses & Allied Health Professionals (AHP) Seminar  
Meeting Room 216

Chair: Peter Pietschmann (Austria)

09:00 – 09:20  Basics of bone biology for Allied Health Professionals  
Martina Rauner (Germany)

09:20 – 09:25  Discussion

09:25 – 09:45  The new bone toolbox for our patients: osteodensitometry, micro-CT and HR-pQCT  
Peter Pietschmann (Austria)

09:45 – 09:50  Discussion

09:50 – 10:10  How can we use bone biopsy to analyze bone metabolism and how does it help patients?  
Heikki Kröger (Finland)

10:10 – 10:15  Discussion

10:15 – 10:35  Bone turnover markers: what they are and how to interpret them  
Pawel Szulc (France)

10:35 – 10:40  Discussion

09:05 – 10:05  Concurrent Oral Presentations 1:  Auditorium 101

Clinical/Public Health: Frailty, Osteoporosis and Sarcopenia

For session details please see the online programme on the congress website or in the congress app

09:05 – 10:05  Concurrent Oral Presentations 1:  Auditorium 103

Basic/Translational: Pathways inducing bone diseases

For session details please see the online programme on the congress website or in the congress app

10:05 – 11:00  Coffee Break / Poster Exhibition / Industry Exhibition
11:00 – 12:00  **Plenary Symposium 2:**  
**Insights from Outside – Organ-on-Chips: New tools for bone?**  
*Chairs:*  
Radmila Matijevic (Serbia)  
Susanna Miettinen (Finland)  
*Chair Live Stream:*  
Isabel Orriss (United Kingdom)  
11:00 – 11:30  
Angiogenesis-on-Chip  
*Andries Van der Meer (Netherlands)*  
11:30 – 12:00  
Tumor- and Airway-on-Chip models: from basic research to clinical applications  
*Edmond Young (Canada)*  
12:00 – 13:00  
Lunch Break / Poster Exhibition / Industry Exhibition  
12:00 – 12:30  
**ECTS Named Awards Ceremony**  
*2022 ECTS Philippe Bordier Clinical Award*  
Barbara Obermayer-Pietsch (Austria)  
*2022 ECTS Iain T Boyle Award*  
Natasha Appelman-Dijkstra (Netherlands)  
*2022 ECTS Mike Horton Basic/Translational Award*  
Ulf H. Lerner (Sweden)  
12:30 – 13:00  
**Poster Forum: Basic/Translational**  
*For session details please see the online programme on the congress website or in the congress app*  
12:30 – 13:00  
**Online Coffee Shop: Organ-on-Chips:**  
*New tools for bone?*  
*Barista:*  
Andries Van der Meer (Netherlands)  
Edmond Young (Canada)  
*– For online audience only –*
13:10 – 14:30 Nurses & Allied Health Professionals (AHP) Seminar 2

Meeting Room 216

Chair: Peter Pietschmann (Austria)

Adalbert Raimann (Austria)

13:31 – 13:36 Discussion

13:36 – 13:57 Treatment of osteoporosis: current state of the art
Polyzois Makras (Greece)

13:57 – 14:02 Discussion

14:02 – 14:23 The role of osteoporosis nurses as part of the management of patients
Pauliina Tamminen (Finland)

14:23 – 14:30 Discussion

13:30 – 14:30 Educational Symposium: How to overcome research barriers on rare bone conditions

Auditorium 101

For session details please see the online programme on the congress website or in the congress app

Session organized by the European Rare Bone Forum (ERBF)

13:30 – 14:30 Meet-the-Expert – Basic /Translational

Meeting Room 205

OoC/microfluidics/shear stress
Andries Van der Meer (Netherlands)

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

Meeting Room 208

Meet the endocrinologist. Identification and management of patients with endocrine causes of bone disease in the bone clinic
Richard Eastell (United Kingdom)
13:30 – 14:30  Meet-the-Expert – Clinical/Public Health  
Meeting Room 209  
How can health economics help us deliver better patient care in the musculoskeletal area  
*Mickael Hiligsmann (Netherlands)*

14:45 – 16:15  Industry Sponsored Session  
Auditorium 103  
See page 102

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

16:45 – 17:45  Plenary Oral Presentations 1:  
Auditorium 101  
Current and novel factors in bone diseases  
*For session details please see the online programme on the congress website or in the congress app*

18:00 – 19:00  Concurrent Oral Poster Presentations 1:  
Auditorium 101  
Clinical/Public Health  
*For session details please see the online programme on the congress website or in the congress app*
18:00 – 19:00  Concurrent Oral Poster Presentations 1: Basic/Translational  
**For session details please see the online programme on the congress website or in the congress app**

19:00 – 20:00  NI Mentoring Session  
**Chairs: Konstantin Horas (Germany) Petar Milovanovic (Serbia)**

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 small grants  
  *Alex Ireland (United Kingdom)*

- The world of peer review  
  *Elizabeth Zimmerman (Canada)*

- How to transition to independence  
  *Martina Rauner (Germany)*

- How to plan animal experiments  
  *Jan Tuckermann (Germany)*

- How to conduct studies with industry partners & key aspects of clinical study design  
  *Robert Stadt (Switzerland)*

- How to deal with negative results  
  *Marietta Herrmann (Germany)*

19:00 – 20:00  Industry Sponsored Session  
See page 104

20:00 – 21:30  ECTS 2022 Faculty Reception  
By invitation only
# Programme Overview

**Monday, 09 May 2022**

Please note that all times are EEST

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<tr>
<th>Time</th>
<th>Auditorium 101</th>
<th>Auditorium 103</th>
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<td>Concurrent Symposium 2: New insights into disturbances in calcium and phosphate homeostasis</td>
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<td>Concurrent Oral Presentations 2: Basic/Translational: Mechanisms involved in bone fragility</td>
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<td>New Data Abstracts</td>
<td>Meet-the-ECTS Committees</td>
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Monday 09 May 2022

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Coffee Break / Poster Exhibition / Industry Exhibition

12:00: ECTS Fellowship Ceremony at Awardee Wall  p. 49

Lunch Break / Poster Exhibition / Industry Exhibition

meet-the-expert: how should i manage the skeletal health of patients after weight loss surgery?  p. 52
meet-the-expert: research needs in osteoporosis in this decade  p. 52
ects-ifmrs joint session  p. 52

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Coffee Break / Poster Exhibition / Industry Exhibition
Scientific Programme

Monday, 09 May 2022

08:00 – 09:00 Concurrent Symposium 2: 
Clinical/Public Health:
New insights into disturbances in calcium and phosphate homeostasis

Chairs: Roger Bouillon (Belgium) 
Barbara Obermayer-Pietsch (Austria)

Chair Live Stream: Julien Paccou (France)

08:00 – 08:30 Parathyroid and renal regulation of calcium metabolism
Rajesh Thakker (United Kingdom)

08:30 – 09:00 Update on hyperphosphatemic conditions
Rachel Gafni (United States)

08:00 – 09:00 Concurrent Symposium 2: 
Basic/Translational Science
Osteoclasts

Chairs: Teun De Vries (Netherlands) 
Isabel Orriss (United Kingdom)

Chair Live Stream: Ulrike Baschant (Germany)

08:00 – 08:30 Osteoclast activity: pits versus trenches/trails
Kent Søe (Denmark)

08:30 – 09:00 Osteoclasts angiogenesis and senescence
Mei Wan (United States)

09:05 – 10:05 Concurrent Oral Presentations 2: 
Clinical/Public Health
Rare Bone Diseases Clinical

For session details please see the online programme on the congress website or in the congress app
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| 09:05 – 10:05 | Concurrent Oral Presentations 2: Basic/Translational Mechanisms involved in bone fragility  
  For session details please see the online programme on the congress website or in the congress app |
| 10:30 – 11:00 | Coffee Break / Poster Exhibition / Industry Exhibition |
| 11:00 – 12:00 | Plenary Symposium 3: Cranial defects and repair  
  Chairs: Claudine Blin (France)  
  Heikki Allan Koistinen (Finland)  
  Chair Live Stream: Alex Ireland (United Kingdom)  
  11:00 – 11:30 Craniosynostosis: genetics and pathophysiology Steve Twigg (United Kingdom)  
  11:30 – 12:00 Bioactive implants in the correction of cranio-facial defects Pekka Vallittu (Finland) |
| 12:00 – 13:30 | Lunch Break / Poster Exhibition / Industry Exhibition |
| 12:00 – 12:15 | ECTS Fellowship Ceremony  
  2022 Fellowship – Clinical: Syazrah Salam (United Kingdom)  
  2022 Fellowship – Basic: Federica Scotto di Carlo (Italy) |
| 12:30 – 13:00 | Online Coffee Shop: Cranial defects and repair  
  – For online audience only –  
  For session details please see the online programme on the congress website or in the congress app |
12:30 – 13:30  
**Poster Forum: Clinical/Public Health**  
Meeting Room 207

*For session details please see the online programme on the congress website or in the congress app*

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13:30 – 14:30  
**Educational Symposium:**  
Auditorium 101

**Methodological assessment of bone in kids for nutritional interventions, a key investigation for growth**

*Chairs:*  
Martine Cohen-Solal (France)  
Marie Noelle Horcajada (Switzerland)

*Chair Live Stream:* Nicolas Bonnet (Switzerland)

13:30 – 13:50  
Bone Opportunities of DXA to investigate nutritional intervention during childhood.  
David Weber (United States)

13:50 – 14:10  
Bone Opportunities of ultrasound to investigate nutritional intervention during childhood.  
Kay Raum (Germany)

14:10 – 14:15  
Polling Questions

14:15 – 14:30  
Questions & Answers

*Supported by an educational grant from industry*

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13:30 – 14:30  
**Meet-the-Expert – Basic/Translational**  
Meeting Room 205

**Bone-muscle cross talk**  
Gustavo Duque (Australia)

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13:30 – 14:30  
**Meet-the-Expert – Clinical/Public Health**  
Meeting Room 206

**Meet the rheumatologist. Identification and management of patients with inflammatory causes of bone disease in the bone clinic**  
Nicholas Harvey (United Kingdom)
Clinical Training Course on Metabolic Bone Diseases

29-30 September 2022
The Edge, Sheffield, United Kingdom

The programme will provide participants with the fundamental and advanced knowledge in clinical skills for the evaluation and management of patients with a metabolic bone disease.

Delegates will also gain a comprehensive understanding of diagnostic tools and treatment options.

The training course will combine state-of-the-art lectures with discussion of cases in small groups. It will offer plenty of opportunities for networking and share ideas.

Learning Outcomes:

The 2022 training course will develop over two-full days training and will:
- Inform about metabolic bone diseases and disorders of mineral homeostasis
- Discuss cases to illustrate key points in diagnosis and treatment
- Identify clinical guidelines that should be followed
- Offer advice about management of individual cases

www.ectsoc.org/education
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<td>Meet-the-Expert – Basic/Translational</td>
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<td>Mechanobiology of fracture resistance</td>
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<td><em>Elizabeth Zimmerman (Canada)</em></td>
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<td>Meet-the-Expert – Clinical/Public Health</td>
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<td>How should I manage the skeletal health of patients after weight loss surgery?</td>
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<td><em>Carola Zillikens (Netherlands)</em></td>
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<td>Meet-the-Expert – Clinical/Public Health</td>
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<td>Research needs in osteoporosis in this decade</td>
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<td><em>Bente Langdahl (Denmark)</em></td>
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<td>ECTS-IFMRS Joint Session</td>
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<td><em>Chairs: Bente Langdahl (Denmark) Katharina Jähn-Rickert (Germany)</em></td>
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<td>13:30 – 13:45</td>
<td>Promoting MSK science through global education and influencing</td>
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<td><em>Anthony Woolf (United Kingdom)</em></td>
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<td>13:45 – 14:00</td>
<td>Challenges and opportunities for young investigators in bone research: initiatives of ECTS and perspectives from Central/Southern Europe</td>
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<td><em>Petar Milovanovic (Serbia)</em></td>
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<td>14:00 – 14:15</td>
<td>Advancing education in musculoskeletal research in Africa</td>
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<td><em>Yasser El-Miedany (United Kingdom)</em></td>
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<td>14:15 – 14:30</td>
<td>Plenary discussion</td>
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<td>New Data Abstracts</td>
<td>Auditorium 101</td>
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| 14:45 – 16:00| **Meet-the-ECTS Committees**  
*For session details please see the online programme on the congress website or in the congress app* | Auditorium 103      |
| 16:15 – 16:45| **Coffee Break / Poster Exhibition / Industry Exhibition**                                                   |                     |
| 16:45 – 17:45| **Plenary Oral Presentations 2:**  
*Insights in osteoporosis treatments and metabolism*  
*For session details please see the online programme on the congress website or in the congress app* | Auditorium 101      |
| 18:00 – 19:00| **Concurrent Oral Poster Presentations 2:**  
*Clinical/Public Health*  
*For session details please see the online programme on the congress website or in the congress app* | Auditorium 101      |
| 18:00 – 19:00| **Concurrent Oral Poster Presentations 2:**  
*Basic/Translation*  
*For session details please see the online programme on the congress website or in the congress app* | Auditorium 103      |
| 19:00 – 20:00| **NI Seminar & Gathering**  
*For session details please see the online programme on the congress website or in the congress app* | Meeting Room 206    |
# Programme Overview

**Tuesday, 10 May 2022**

Please note that all times are EEST.

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium 101</th>
<th>Auditorium 103</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Concurrent Symposium 3: Advances in clinical bone imaging</td>
<td>Concurrent Symposium 3: Mechanobiology</td>
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<td>08:30</td>
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<tr>
<td>09:00</td>
<td>Concurrent Oral Presentations 3: Clinical/Public Health: Management of Osteoporosis and Metabolic Bone Disease</td>
<td>Concurrent Oral Presentations 3: Basic/Translational: Mesenchymal stem cells, chondrocytes and osteoblasts</td>
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<td>09:30</td>
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<td>10:00</td>
<td>Coffee Break</td>
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<td>10:30</td>
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<tr>
<td>11:00</td>
<td>Plenary Symposium 4: Genetics and epidemiology of bone strength and fracture risk</td>
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<td>11:30</td>
<td>Coffee Break</td>
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<tr>
<td>12:00</td>
<td>Big Clinical Session: Long term strategy for osteoporosis patient management</td>
<td>Big Basic Science Session: Liquid biopsies to identify circulating cells related to bone metabolism and metastases</td>
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<td>12:30</td>
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<td>13:00</td>
<td>Plenary Oral Presentations 3: Rare bone diseases – mechanisms and interventions</td>
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<td>13:30</td>
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<td>14:00</td>
<td>Awards Ceremony &amp; Closing</td>
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Clinical/Public Health: Red  
Basic/Translational: Blue  
Clinical & Basic: Purple  
ECTS Events: Grey
Scientific Programme

Tuesday, 10 May 2022

08:00 – 09:00 Concurrent Symposium 3: Clinical/Public Health

Auditorium 101

Advances in clinical bone imaging
Chairs: Claus-Christian Glüer (Germany)
Cesar Libanati (Belgium)

08:00 – 08:30 Emerging CT and X-ray technologies for human bone and bone marrow
Daniela Pfeiffer (Germany)

08:30 – 09:00 Advances in human functional bone imaging
Amelia Moore (United Kingdom)

08:00 – 09:00 Concurrent Symposium 3: Basic/Translational Science

Auditorium 103

Mechanobiology
Chairs: Eric Hay (France)
Dilara Yilmaz (Switzerland)
Chair Live Stream: Petar Milovanovic (Serbia)

08:00 – 08:30 How mechanobiology affects fracture resistance
Elizabeth Zimmerman (Canada)

08:30 – 09:00 Piezo channels as essential mechanosensors in the skeleton
Gretl Hendrickx (Belgium)

09:05 – 10:05 Concurrent Oral Presentations 3: Clinical/Public Health

Auditorium 101

Management of Osteoporosis and Metabolic Bone Disease

For session details please see the online programme on the congress website or in the congress app
09:05 – 10:05  Concurrent Oral Presentations 3:  
**Auditorium 103**

**Basic/Translational**

**Mesenchymal stem cells, chondrocytes and osteoblasts**

*For session details please see the online programme on the congress website or in the congress app*

10:05 – 10:30  Coffee Break / Poster Exhibition / Industry Exhibition

10:30 – 11:30  **Plenary Symposium 4:**  
**Auditorium 101**

**Genetics and epidemiology of bone strength and fracture risk**

*Chairs:*  
Bente Langdahl (Denmark)  
Weibo Xia (China)

*Chair Live Stream:*  Carolina Medina-Gomez (Netherlands)

10:30 – 11:00  Genetics – from pathophysiology to polygenic risk scores  
Brent Richards (Canada)

11:00 – 11:30  Epidemiology – update on biobanks and large cohorts  
Nicholas Harvey (United Kingdom)

11:30 – 11:45  Break / Poster Exhibition / Industry Exhibition

11:45 – 12:45  **Big Clinical Session:**  
**Auditorium 101**

**Long term strategy for osteoporosis patient management**

*Chairs:*  
Polyzois Makras (Greece)  
Camilla Schalin-Jantti (Finland)

11:45 – 12:15  Discontinuation of non-bisphosphonates osteoporosis treatment  
Carola Zillikens (Netherlands)

12:15 – 12:45  Challenging the current algorithms for long term osteoporosis treatment  
Bente Langdahl (Denmark)
### Big Basic Science Session:

**Tuesday 10 May 2022**

#### 11:45 – 12:45

**Auditorium 103**

**Liquid biopsies to identify circulating cells related to bone metabolism and metastases**

*Chairs:* Kaisa Ivaska (Finland)  
Bram Van der Eerden (Netherlands)

*Chair Live Stream:* Michaela Tencerová (Czech Republic)

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>11:45</td>
<td>Circulating Osteogenic Progenitors (COP)</td>
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<td>11:45</td>
<td>Gustavo Duque (Australia)</td>
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<tr>
<td>12:15</td>
<td>From discovery to clinical implementation</td>
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<td>12:15</td>
<td>Klaus Pantel (Germany)</td>
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</tbody>
</table>

### Plenary Oral Presentations 3:

**Tuesday 10 May 2022**

#### 12:45 – 13:45

**Auditorium 101**

**Rare bone diseases – mechanisms and interventions**

*For session details please see the online programme on the congress website or in the congress app*

### Awards Ceremony & Closing

**Tuesday 10 May 2022**

#### 13:45 – 14:30

**Auditorium 101**

*Chairs:* Bo Abrahamsen (Denmark)  
James Gallagher (United Kingdom)

New Academy Members Presentation

- 2022 ECTS-Bone Reports New Investigator Awards
- 2022 ECTS-ICCBH New Investigator Awards
- 2022 ECTS Travel Awards
- 2022 East-Meets-West Research Award
- 2022 ECTS Central Eastern Europe Travel Award
- NI Seminar & Poster Focus Awards Supported by Nestlé Nutrition
- Results of Science Sketches Competition
- Results of ECTS Charity Run
Posters

All posters will be displayed on-site in the poster exhibition located in two locations, separated into clinical and basic posters, on the 1st Floor in the Poster Lofts. There will also be an ePoster platform for virtual attendees.

Presenters that are attending the congress in Helsinki 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, 08 May for posters with the following topics:
- Biomarkers and biochemical testing
- Bone bioengineering, regeneration and implants
- Bone biomechanics and quality
- Bone development/growth and fracture repair
- Cancer and bone: Basic/Translational
- Energy metabolism, fat, diabetes, nutrition: Basic/Translational
- Mammalian and non-mammalian models, including preclinical imaging
- Muscle, physical activity and bone: Basic/Translational
- Osteoporosis: evaluation and imaging
- Osteoporosis: pathophysiology and epidemiology
- Innovative concepts, new technologies, case reports

12:00 – 13:00 on Monday, 09 May for posters with the following topics:
- Osteoblasts and bone formation
- Osteoclasts and bone resorption
- Osteocytes and mechanobiology
- Chondrocytes and cartilage
- Endocrine factors: Basic/Translational
- Genetics & epigenetics
- Inflammation, arthritis and other joint diseases: Basic/Translational
- Osteoporosis: treatment
- Other diseases of bone and mineral metabolism: Basic/Translational
- Paediatric bone diseases
- Rare bone diseases: Basic/Translational
All posters are sorted by poster number and abstract topic

Please note that only the presenting authors are listed below. For the full author list, please refer to the congress app.

Biomarkers and biochemical testing

P001 Evaluation of response to alendronate treatment of osteoporosis using cathepsin K and other biomarkers
Roxana Novac1, Emergency Hospital Moinesti, Endocrinology, Bacau, Romania

P002 The effects of three different vitamin D3 supplementation regimens in deficient subjects on inflammatory cytokines – a randomised open-label parallel groups study
Angelo Fassio1, University of Verona- Italy, Rheumatology, Verona, Italy

P004 Searching for a systemic phenotype in cherubism in a group of 11 cherubism patients
Amélie COUDERT4, Inserm U 1132- BIOSCAR, UFR Odontologie- Université de Paris, Paris, France

P005 Collagen X biomarker, linear growth and bone development in a Vitamin D intervention study in Infants
Helena Hauta-Alus1-2, University of Helsinki and Helsinki University Hospital, Children’s Hospital, Helsinki, Finland, 2University Of Helsinki, Research Program for Clinical and Molecular Metabolism, Helsinki, Finland

P006 Dp-ucMGP – a modulator in disease with an inflammatory component?
Natascha Schweighofer1-2, Division of Endocrinology and Diabetology, Department of Internal Medicine- Medical University of Graz, Graz, Austria, 2CBmed GmbH, Center for Biomarker research in Medicine, Graz, Austria

P007 Evaluating The Effect Of Food, Fasting And Exercise On Inorganic Pyrophosphate (PPI) Levels In Healthy Subjects
Yves Sabbagh3, Inozyme, Research, Boston, United States

P008 Osteocalcin stimulates human adipocyte browning: a new element in bone-adipose tissue communication
Giovanni Lombardi1, IRCCS Istituto Ortopedico Galeazzi, Laboratory of Experimental Biochemistry and Molecular Biology, Milano, Italy

P010 A two-year longitudinal study: Bone Loss in Patients with Erosive and Non-erosive Hand Osteoarthritis, Comparation.
Olga Růžičková1, Institute of Rheumatology and Department of Rheumatology- 1st Faculty of Medicine- Charles University- Prague- Czech Republic, Rheumatology, Prague 2, Czech Republic

P011 Analysis of the transcriptome in the TgRANKL mouse model of osteoporosis reveals mRNAs, miRNAs, and IncRNAs as potent regulators of osteoporosis
Eleni Douni2, Biomedical Sciences Research Center “Alexander Fleming”, Institute for Bioinnovation, Vari, Greece

Bone bioengineer, regeneration and implants

P014 The effects of mesenchymal stem cell intravenous injection on the 3rd day after application tibial defects on gross morphology of the spleen
Valeriy Bibik1, State Establishment of Lugansk People’s Republic Saint Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P015 Tissue engineered mimetic periosteum for efficient delivery of rhBMP-2
Froilán Granero-Moltó1, Clinica Universidad de Navarra CUN, Cirugía Ortopédica y Traumatología, Pamplona, Spain
P016 Effect of hypertension on osteoblast differentiation of mesenchymal stem cells and bone repair
Adalberto Rosa1, 1University of São Paulo - School of Dentistry of Ribeirão Preto, Bone Research Lab, Ribeirão Preto, Brazil

P017 Effect of the interaction between cells from healthy and osteoporotic rats on osteoblast differentiation and bone repair
Adalberto Rosa1, 1University of São Paulo - School of Dentistry of Ribeirão Preto, Bone Research Lab, Ribeirão Preto, Brazil

P018 A novel smurf1 inhibitor-loaded alginate hydrogel for promoting local bone formation in distinctive age-related osteoporosis during spinal fusion
Chuanxin Zhong1, 1HONG KONG BAPTIST UNIVERSITY, School of Chinese Medicine, Hong Kong, China

P019 Bioactive implant materials have distinct effects on osteoblastic cell migration
Karoliina Kajander1, 1University of Turku, Institute of Biomedicine, Turku, Finland

P020 Anabolic effects of rhPTH and novel PTH analog on titanium osseointegration and bone regeneration in ovariecctomized beagle model
Jin-Woo Kim2, 2Ewha Womans University, Oral and Maxillofacial Surgery, Seoul, Korea-South

P021 Repair of a critical-size defect in estrogen-deficient mice treated with bisphosphonates
Franziska Strunz1,2, 1University of Bern, Department for BioMedical Research, Bern, Switzerland
2University of Bern, Graduate School for Cellular and Biomedical Sciences, Bern, Switzerland

P022 Strength of the humerus after implantation of OC-015 into the tibia and intravenous administration of mesenchymal stem cells on the 10th day after intervention
Vladyslav Luzin1, 1State Establishment of Lugansk People's Republic Saint Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P023 Comparison of efficacy of rhBMP2 and rhBMP6 delivered within autologous blood coagulum with synthetic ceramics in rat subcutaneous assay
Natalia Ivanjko1, 1School of Medicine University of Zagreb, Laboratory for Mineralized Tissues, Zagreb, Croatia

P024 rhBMP6 in autologous blood coagulum with ceramics induces rapid spinal fusion in sheep
Nikola Štoković1, 1School Of Medicine University Of Zagreb, Laboratory for mineralized tissues, Zagreb, Croatia

P025 Strength of the mandible after implantation of ceramic hydroxilapatite into the tibia and intravenous administration of mesenchymal stem cells on the 3rd day after intervention
Vladyslav Luzin1, 1State Establishment of Lugansk People's Republic Saint Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P026 Chemical composition of maxilla in adult rats after implantation of hydroxyapatite material OK-015 into the tibia
Vladyslav Luzin1, 1State Establishment of Lugansk People's Republic Saint Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P027 Bioresorbable Magnesium Implants for first in Human surgical fixation of Ankle Fractures: Clinical follow-up and HR-pQCT Assessment of the Implantation Site
Ines Foessl1, 1Medical University of Graz, Department of Internal Medicine- Division of Endocrinology and Diabetology, Graz, Austria
P028  **Spectral-CT Assessments of a Resorbable Calcium-based Bone Implant**  
*Jaime A. Peña*, 1Section Biomedical Imaging- MOIN CC, Radiology and Neuroradiology- University Hospital Schleswig-Holstein UKSH, Kiel, Germany

ND-P001  **3D cell culture model for differentiated natural osteocytes without artificial additives**  
*Lene Solberg*, 1Division of Laboratory Medicine- Oslo University Hospital, Department of Pathology, Oslo, Norway

**Bone biomechanics and quality**

P029  **Risk factors for developing sacral insufficiency fractures**  
*Hans-Christof Schober*, 1Klinikum Suedstadt Rostock- Academic Teaching Hospital of the University of Rostock, Dept Internal Med IV, Rostock, Germany

P030  **HR-pQCT Measures of Bone Microarchitecture in Type 1 and Type 2 Diabetes Mellitus: Systematic Review and Meta-analysis**  
*Matthias Walle*, 1Institute for Biomechanics, ETH Zurich, Zurich, Switzerland

P031  **Possible association of cortical thickness with spontaneous non-traumatic fracture patterns of the humeral shaft**  
*Tadashi Yasuda*, 1Kobe City Medical Center General Hospital, Department of Orthopaedic Surgery, Kobe, Japan

P032  **Effects of streptozotocin-induced diabetes on strength of the humerus in rats of different ages**  
*Alexandr Torba*, 1State Establishment of Lugansk People’s Republic Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P033  **Depletion of TRAP/Acp5 abolishes the bone forming effects of mechanical loading in male mice**  
*Bhavik Rathod*, 1Karolinska institutet, Department of Laboratory Medicine- Division of pathology, Stockholm, Sweden

P034  **Bone quality in ovariectomized monkeys treated with two doses of teriparatide for either 18 months, or 12 months followed by withdrawal for 6 months.**  
*Sonja Gamsjaeger*, 2Ludwig Boltzmann Institute of Osteology, at the Hanusch Hospital of OEGK and AUVA Trauma Centre Meidling- 1st Medical Department- Hanusch Hospital, Vienna, Austria

P035  **Effects of hypobaric swimming training on trabecular bone volume and structure in old type 2 diabetic rats**  
*Hiroyuki Tamaki*, 1National Institute of Fitness and Sports in Kanoya, Department of Sports and Life Science, Kanoya, Japan

P036  **Postmortem micro-scale assessment of congestive hepatopathy induced vertebral alterations**  
*Jelena Jadzic*, 1Laboratory of Bone Biology and Bioanthropology, Institute of Anatomy- University of Belgrade- Faculty of Medicine- Dr. Subotica no. 4/II, Belgrade, Serbia

P036  **Postmortem micro-scale assessment of congestive hepatopathy induced vertebral alterations**  
*Jelena Jadzic*, 1Laboratory of Bone Biology and Bioanthropology, Institute of Anatomy- University of Belgrade- Faculty of Medicine- Dr. Subotica no. 4/II, Belgrade, Serbia

P037  **Osteocyte lacunae in transiliac bone biopsy samples across life span**  
*Stéphane Blouin*, 1Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of OEGK and AUVA Trauma Centre Meidling, 1st Medical Department Hanusch Hospital, Vienna, Austria
P038  The effects of systemic and local factors on regulation of skeletal and fat tissues in a mouse model of osteogenesis imperfecta
*Nitsan Nimni*, 1Ben-Gurion University, Physiology and cell biology, Beer Sheva, Israel

P039  Elucidation of cellular and molecular mechanisms underlying GPR39 regulation of bone matrix composition
*Biplab Chatterjee*, 1Ben Gurion University, Department of physiology and cell biology, Beer sheva, Israel

P040  Spatial correlations between the local architecture of the lacunocanalicular network and the surrounding mineralized matrix in mouse tibiae
*Richard Weinkamer*, 1Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Potsdam, Germany

P041  Prediction of Fracture Toughness of Human Cortical Bone Using Machine Learning
*Mustafa Unal*1,2, 1Karamanoglu Mehmetbey University, Department of Bioengineering, Karaman, Turkey, 2Karamanoglu Mehmetbey University, Department of Biophysics, Karaman, Turkey

P042  Assessment of the Bone Mineral Density and Microstructure of the Human Femoral Head according to Different Tip-apex Distances Can Guide Treatment of Intertrochanteric Hip Fractures
*Won Seok-Hyung*1, 1Armed Forces Goyang Hospital, Orthopedic Surgery, Goyang, Korea-South

P043  Bone properties in a rat model of differential expression of the inflammatory Cita gene
*Fiona E McGuigan*2, 2Clinical Sciences Malmö- Lund University, Clinical Sciences Malmö, Malmö, Sweden

P044  Comparison of the microarchitecture of commonly fractured vertebral bodies in the young and old
*Hans-Christof Schober*, 1Klinikum Suedstadt Rostock- Academic Teaching Hospital of the University of Rosock, Dept Internal Med IV, Rostock, Germany

P045  Recovery of hypomineralization in auditory ossicles of vitamin D receptor (Vdr) deficient mice
*Maximilian M. Delsmann*1, 1University Medical Center Hamburg-Eppendorf, Department of Trauma and Orthopaedic Surgery- Division of Orthopaedics, Hamburg, Germany

P046  Local microdamage accumulation and impaired osteocyte viability in human cortical bone is linked to type 1 diabetes mellitus
*Sofie Kolibova*, 1University Medical Center Hamburg Eppendorf, Department of Osteology and Biomechanics, Hamburg, Germany

P047  Microstructural alterations of superolateral femoral neck cortical bone in men with diabetes as a possible basis for fragility fractures: a cadaveric study
*Aleksandar Cirovic*, 1Faculty of Medicine- University of Belgrade, Institute of Anatomy, Belgrade, Serbia

P048  Sedentary behavior is associated with poorer bone microarchitecture at the distal tibia in older patients as assessed via high-resolution peripheral quantitative computed tomography (HR-pQCT)
*Ursula Heilmeier*, 1ECTS Academy, Department of Geriatrics and Aging Research- Center on Aging and Mobility- University Hospital Zurich- University of Zurich, Unterhaching, Germany
ND-P002  Bone quality of growing rats submitted to food restriction and further refeeding: a histomorphometric and densitometric study.  
Patrícia Madalena San Gregório Guedes1, 1University of Sao Paulo, Department of Orthopedics and Anesthesiology of the Faculty of Medicine of Ribeirao Preto- USP, Ribeirão Preto, Brazil

ND-P003  Development of diabetes-sensitive computational models of bone using finite element method for pre-clinical tracking of diabetic bone fragility  
Mei-Chun Lin1, 1University Medical Center Hamburg-Eppendorf, Department of Osteology and Biomechanics, Hamburg, Germany

ND-P004  Effect of escitalopram oxalate on quality bone tissue of ovariectomized rats  
Roberta Carminati Shimano1, 1University of Sao Paulo, Department of Orthopedics and Anesthesiology of the Faculty of Medicine of Ribeirao Preto- USP, Ribeirão Preto, Brazil

Bone development/growth and fracture repair

P049  Low-magnitude High-Frequency Vibration Treatment Augmented the Inflammatory Stage in Osteoporotic Fracture in vivo through the p38-MAPK Pathway  
Can Cui1, 1The Chinese University of Hong Kong, Orthopaedics and Traumatology, Hong Kong, Hong Kong

P050  Prediction of an imminent fracture after an index fracture – models derived from the Frisbee cohort  
Laura Iconaru1, 1CHU Brugmann, Endocrinology, Brussels, Belgium

P051  Mesenchymal stromal cell-derived septoclasts resorb cartilage during developmental ossification and fracture healing  
Kishor Kumar Sivaraj1, 1Max Planck Institute for Molecular Biomedicine, Tissue Morphogenesis, Münster, Germany

P052  Complement receptor C5aR1 on osteoblasts regulates osteoclastogenesis during ovariectomy-induced bone loss in mice  
Jasmin Wehrstein1, 1Institute of Orthopaedic Research and Biomechanics, University Medical Center Ulm, Ulm, Germany

P053  Effects of vitamin D supplementation on the functional outcome in patients with osteoporotic vertebral compression fracture and vitamin D deficiency  
Sangbong Ko1, 1Daegu Catholic University Medical Center, Orthopaedic Surgery, Daegu, Korea- South

P054  Strength features of the tibia in diabetic rats after repeated fracture  
Nadezhda Mosyagina1, 1SE “St. Luke Lugansk State Medical University”, Human anatomy department, Lugansk, Ukraine

P055  Formation of the skeletal bones in juvenile rats after 90-day excessive caffeine intake  
Anna Movenko1, 1State Establishment of Lugansk People’s Republic Saint Luka Lugansk State Medical University, Department of Human Anatomy, Lugansk, Ukraine

P056  Evaluation of a CRISPR/Cas9-based dual-fluorescent reporter mouse model of premature aging to investigate the mechanobiology of bone regeneration.  
Neashan Mathavan1, 1ETH Zurich, Institute for Biomechanics, Zurich, Switzerland

P057  Bmp2 overexpression effects over appendicular skeleton development  
Froilán Granero-Moltó2, 2Clínica Universidad de Navarra, Cell Therapy- Orthopedic Surgery and Traumatology, Pamplona, Spain

P058  Spatial lipidomic profiling of joint tissues using MALDI-imaging; essential role of PHOSPHO1 in growth plate lipid homeostasis.  
Jordan Tzvetkov1, 1University of York, Biology, York, United Kingdom
<table>
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| P059  The regenerating zebrafish scale: a platform to study osteo-anabolic processes relevant to human skeletal diseases  
_Dylan Bergen_¹,  
¹University of Bristol, School of Physiology-Pharmacology- and Neuroscience, Bristol, United Kingdom |
| P060  Elucidating gene regulatory mechanisms underlying human skeletal development using human pluripotent stem cell-derived bone tissues and single-cell multiome analysis  
_Shoichiro Tani_¹,²,  
¹The University of Tokyo, Center for Disease Biology and Integrative Medicine-Graduate School of Medicine, Tokyo, Japan  
²The University of Tokyo, Department of Orthopaedic Surgery-Graduate School of Medicine, Tokyo, Japan |
| P061  Mast cell deficiency improves compromised fracture healing after severe trauma  
_Verena Fischer_¹,  
¹Institute of Orthopedic Research and Biomechanics, University Medical Center Ulm, Ulm, Germany |
| P062  Bone morphogenetic protein 3 in bone tissue formation and regeneration  
_Viktorija Rumenovic_¹,  
¹School of Medicine University of Zagreb, Laboratory for Mineralized Tissues Center for Translational and Clinical Research, Zagreb, Croatia |
| P063  Inactivation of beta2-adrenergic signaling improves bone regeneration  
_Paul-Richard Knapstein_¹,  
¹University Medical Center Hamburg-Eppendorf, Department of Trauma and Orthopedic Surgery, Hamburg, Germany |
| P064  Age-related changes in osteocytes and blood vessels in the compact bone of the femur in mouse  
_Mathilde Palmier_¹,  
¹Inserm / Université de Bordeaux, U1026 BioTis, Bordeaux, France |
| P065  Pharmacological inhibition of norepinephrine reuptake improves late-stage fracture healing but exerts adverse effects on intact bone  
_Antonia Donat_¹,  
¹University Medical Center Hamburg-Eppendorf, Clinic of Trauma and Orthopedic Surgery, Hamburg, Germany |
| P066  The gap junction protein Panx3 is essential for bone regeneration  
_Shan Jiang_¹,  
¹University Medical Center Hamburg-Eppendorf, Department of Trauma and Orthopedic Surgery, Hamburg, Germany |
| P067  The chemokine Cxcl9 is a crucial regulator of bone healing  
_Shan Jiang_¹,  
¹University Medical Center Hamburg-Eppendorf, Department of Trauma and Orthopedic Surgery, Hamburg, Germany |
| P068  The influence of snuff on bone accretion in late adolescence. The Fit Futures Study  
_Anne Winther_⁴,  
⁴University Hospital of North Norway, Division of Neurosciences-Orthopedics and Rehabilitation Services, Tromsø, Norway |
| P069  Genome-wide association study identifies a novel INDEL marker associated with pediatric fracture risk  
_Carolina Medina-Gomez_¹,  
¹ErasmusMC, Internal Medicine, Rotterdam, Netherlands |
| P070  Identification of proteomics risk markers that are related with bone mineral density and fracture  
_Haojie Lu_¹,  
¹Erasmus MC, Internal Medicine, Rotterdam, Netherlands |
| P071  Vascular calcification and osteoporosis: confounded associations or shared biologic pathways?  
_Haojie Lu_¹,  
¹Erasmus MC, Internal Medicine, Rotterdam, Netherlands |
Cancer and bone

P072 Development of novel therapeutic agents targeting redox regulation system in osteosarcoma

*Hideyuki Kinoshita*, 1Chiba Cancer Center, Orthopaedic Surgery, Chiba, Japan

P073 Recovery from radiation-induced damage to growth plates involves functional compensation

*Yashar Mehrbani Azar*, 1Karolinska Institutet, Department of Women’s and Children’s Health, Stockholm, Sweden

P074 Zoledronate in combination with chemotherapy and surgery: Friend or foe in patients with osteosarcoma? A systematic Review and Meta-Analysis

*Antonia Sophocleous*, 1European University Cyprus, Department of Life Sciences, Nicosia, Cyprus

P075 Identification of proteins which regulate the metastatic spread of breast cancer downstream of TWIST1.

*Steven Wood*, 1University of Sheffield, Oncology and Metabolism, Sheffield, United Kingdom

P076 Identification of osteoblast proteins which are regulated by prostate cancer derived exosomal micro-RNAs.

*Steven Wood*, 1University of Sheffield, Oncology and Metabolism, Sheffield, United Kingdom

P077 Determinants of Vitamin D Levels in Women Treated for Breast Cancer: a baseline analysis of data from DEDiCa trial.

*Angelo Fassio*, 1University of Verona- Italy, Rheumatology, Verona, Italy

P078 The role of Hematopoietic Stem Cell (HSC) markers and Notch2 crosstalk in the regulation of breast cancer (BrCa) cell dormancy.

*Antonio Maurizi*, 1University of L’Aquila, Department of Biotechnological and Applied Clinical Sciences, L’Aquila, Italy

P079 The vitamin D receptor (VDR) is widely expressed in bone metastases of different primary origin

*Jonas Seiler*, 1Orthopaedic Center for Musculoskeletal Research, Orthopaedic Department, Wuerzburg, Germany

P080 Human and Mouse Osteotropic Breast Cancer cells’ Extracellular Vesicles transfer bone cells-influencing miRNAs

*Argia Ucci*, 1University of L’aquila, department of biotechnological and applied clinical sciences, l’aquila, Italy

P081 A mixed pattern of osteolytic and sclerotic lesions is characteristic in metastatic breast cancer patients as evidenced by histomorphometry

*Christina Andreasen*, 1University of Southern Denmark, Clinical Cell Biology – Dept. of Pathology, Odense, Denmark

P082 Osteoblast-derived extracellular vesicles influence MNNG/HOS osteosarcoma cells, reducing their migration and affecting their metabolic activity and redox balance

*Argia Ucci*, 1University of L’Aquila, Department of Biotechnological and Applied Clinical Sciences, L’Aquila, Italy

P083 A human cell-based in vitro model of bone for defining the dormant niche components for disseminated breast and prostate cancer cells

*Arjen Gebraad*, 1Tampere University, Adult Stem Cell Group, Tampere, Finland, 2Tampere University Hospital, Research- Development and Innovation Centre, Tampere, Finland
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Astrid Kamilla Stunes1, 'Norwegian University of Science and Technology, Faculty of Medicine and Health Science- Department of Clinical and Molecular Medicine, Trondheim, Norway

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Thais Pereira-Veiga1, 'University Medical Center Hamburg-Eppendorf UKE, Institute of Tumor Biology ITB, Hamburg, Germany

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Stella D’oronzo1, 'University of Bari Aldo Moro, Department of Biomedical Sciences and Human Oncology, Bari, Italy

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Franziska Wirth1, 'University Hospital Heidelberg, Institute for Immunology, Heidelberg, Germany

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Alexander Lubosch1, 'University Hospital Heidelberg, Institute of Immunology, Heidelberg, Germany

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Caren Zöller1, 'University Hospital Heidelberg, Institute of Immunology, Heidelberg, Germany

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Erika Kague4,4University of Bristol, Physiology- Pharmacology and Neuroscience, Bristol, United Kingdom

P091  An unusual osteoporotic vertebral fracture – Kummell’s Disease
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Julia Reinhardt1, 'University of Muenster, Institute of Musculoskeletal Medicine, Muenster, Germany

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Eleni Douni3, 3Biomedical Sciences Research Center “Alexander Fleming”, Institute for Bioinnovation, Vari, Greece

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Claire-Sophie Devignes1, 'KU Leuven, Clinical and Experimental Endocrinology CHROMETA, Leuven, Belgium
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Caroline Caetano da Silva1, 1Inserm U1132, and Université de Paris, Paris, France

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Noam Levaot2, 2Ben-Gurion University of the Negev, Physiology and Cell Biology, Beer Sheva, Israel

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Franziska Lademann1, 1Technische Universität Dresden, Universitätsklinikum Dresden- Department of Medicine III, Dresden, Germany

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Maria Lucia Schiavone1, 1Humanitas Research Hospital, Medical Biotechnology, Milano, Italy

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Dalia Ali, 'Molecular Endocrinology & Stem Cell Research KMEB, Endocrinology and Metabolism Research-OUH-SDU, Odense, Denmark

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Atenisa Caci, 'Institute of Clinical Research- University of Southern Denmark, Department of Endocrinology and Metabolism- Odense University Hospital, Odense, Denmark

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Janne T. Koivisto, 'Karolinska Institutet, Division of Pathology- Department of Laboratory Medicine, Stockholm, Sweden

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Sandra Pihlström, 'University of Helsinki, Faculty of Medicine, Helsinki, Finland, Folkhälsan Research Center, Institute of Genetics, Helsinki, Finland

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Sunil Poudel, 'University of Algarve- BIOSKEL Lab, Faculty of Medicine and Biomedical Sciences FMCB- PhD Program in Biomedical Sciences- Centre of Marine Sciences, 8005-139 Faro, Portugal

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Guangtao Fu, 'Guangdong Provincial People’s Hospital, Orthopedics, Guangzhou, China
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Aline Bozec1, 'Fau University Clinic Erlangen, Department of Internal Medicine 3, Erlangen, Germany

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Lars Folkestad1, 'Odense University Hospital / University of Southern Denmark,
Department of Endocrinology / Department of Clinical Research, Odense C, Denmark

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Isabel Orriss1, 'Royal Veterinary College, Comparative Biomedical Sciences, London,
United Kingdom

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Neha Sharma1, 'University of Southern Denmark, Dept. of Clinical Research, Odense C,
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Xenia Borggaard1, 'Odense University Hospital- University of Southern Denmark, Clinical
Cell Biology, Odense, Denmark

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Fatemeh Safari1,2, 'University of Bern, Department for BioMedical Research, Bern,
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Matthieu Rouleau1, 'Laboratoire de PhysioMédecine Moléculaire, UMR7370 CNRS-
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Patrícia Madalena San Gregório Guedes1, 1Universidade de São Paulo/ Faculdade de Medicina de Ribeirão Preto, Departamento de Ortopedia e Anestesiologia, Ribeirão Preto, Brazil

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Kaori Tabata1
1Graduate School of Medicine- Dentistry and Pharmaceutical Sciences- Okayama University, Department of Orthodontics, Okayama, Japan

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Heidi Arponen1, 1University of Helsinki and Helsinki University Hospital, Department of Oral and Maxillofacial Diseases- and Children’s Hospital- Pediatric Research Center, Helsinki, Finland
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Saila Laakso, University of Helsinki and Helsinki University Hospital, Children’s Hospital and Pediatric Research Center, Helsinki, Finland, Folkhälssan Research Center, Institute of genetics, Helsinki, Finland, University of Helsinki, Research Program for Clinical and Molecular Metabolism- Faculty of Medicine, Helsinki, Finland

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Andrii Venger, ¹Odessa National Medical University, Department of Microbiology-Virology and Immunology, Odesa, Ukraine

P160 Paralogs of calcitonin encoding gene

Olga Venger, ¹The state institution “SOUTH UKRAINIAN NATIONAL PEDAGOGICAL UNIVERSITY named after K. D. USHYNSKY”, Department of General Disciplines and Clinical Medicine, Odesa, Ukraine

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Navnit Makaram, ¹University of Edinburgh, Institute of Genetics and Cancer, Edinburgh, United Kingdom

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Núria Martinez Gil, ¹Faculty of Biology- Universitat de Barcelona- CIBERER- IBUB- IRSJD, Department of Genetics- Microbiology and Statistics, Barcelona, Spain

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²University of Brighton, School of Applied Sciences, Brighton, United Kingdom

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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. Katharina Straub at the registration desk.

How to submit your presentation on-site
Presentations for Auditorium 101 & Auditorium 103
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 Speakers’ Media Center (located on the 2nd Floor, in room 214) at least 2 hours prior to the start of the respective session. For sessions starting at 08:00 a.m., 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 USB sticks. If you are bringing your own laptop, the presentation will be transferred on-site in the Speakers’ Media Center.

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Speaking Times for Oral Presentations
• Plenary Oral Presentation: 7 minutes + 3 minutes discussion
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• Poster Forum: 5 minutes presentation + 5 minutes discussion
• NI Seminar: 6 minutes presentation + 2 minutes discussion
Information for Poster Presenters On-Site

The poster exhibition is located in two Poster Lofts on the 1st Floor. The Basic Science Poster Loft will be next to the Exhibition in room Kajo. The Clinical Science Poster Loft can be found next to the Registration Area in the Foyer of Room 101/Plenary Hall.

Posters will be on display from Saturday, 07 May to Monday, 09 May (19:00 o’clock). Posters can be mounted on Saturday, 07 May from 08:00 – 09:30 and removed on Monday, 09 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 on-site during the exhibition opening hours. The poster helpdesk will be located in the Poster Loft clinical and basic.

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

12:00 – 13:00 on Sunday, 08 May for posters with the following topics:
- Biomarkers and biochemical testing
- Bone bioengineering, regeneration and implants
- Bone biomechanics and quality
- Bone development/growth and fracture repair
- Cancer and bone: Basic/Translational
- Energy metabolism, fat, diabetes, nutrition: Basic/Translational
- Mammalian and non-mammalian models, including preclinical imaging
- Muscle, physical activity and bone: Basic/Translational
- Osteoporosis: evaluation and imaging
- Osteoporosis: pathophysiology and epidemiology
- Innovative concepts, new technologies, case reports

12:00 – 13:00 on Monday, 09 May for posters with the following topics:
- Osteoblasts and bone formation
- Osteoclasts and bone resorption
- Osteocytes and mechanobiology
- Chondrocytes and cartilage
- Endocrine factors: Basic/Translational
- Genetics & epigenetics
- Inflammation, arthritis and other joint diseases: Basic/Translational
- Osteoporosis: treatment
- Other diseases of bone and mineral metabolism: Basic/Translational
- Paediatric bone diseases
- Rare bone diseases: Basic/Translational

If you have any questions regarding your poster(s) or presentation(s), please do not hesitate to contact the staff at the registration desk.
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Please locate your session room in due time and 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.
CME Accreditation

Accreditation On-Site Congress in Helsinki

The scientific programme of the 49th European Calcified Tissue Society Congress 2022 in Helsinki 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.

The EACCME is an institution of the European Union of Medical Specialists (UEMS, www.eums.eu). EACCME credits are recognised by the American Medical Association towards the Physician’s Recognition Award (PRA). To convert EACCME credits to AMA PRA category 1 credits, please contact the AMA.

PLEASE NOTE: If you need to obtain CME credits, you are required to have your badge scanned daily at the registration desk.

Pre-Congress ECTS 2022

Friday, 06 May 2022:  8 credits

ECTS Congress 2022

Saturday, 07 May 2022:  5 credits
Sunday, 08 May 2022:  8 credits
Monday, 13 May 2022:  7 credits
Tuesday, 14 May 2022:  5 credits
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.
Exhibition Floor Plan
**List of Exhibitors**

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Sponsors / Supporters

We kindly thank all sponsors for their support!
Sponsor names are in alphabetical order

Platinum Supporter
UCB Biopharma SRL

Gold Supporters
Amgen (Europe) GmbH
IPSEN
Nestle Nutrition a division of Nestlé Enterprise S.A

Silver Supporters
Abiogen Pharma S.p.A.
Ascendis Pharma Inc.
Blueprint Genetics
Bruker Biospin GmbH
Inoyme Pharma, Inc.
PHARMATEST
SCANCO Medical AG
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Calciscon AG

City of Helsinki

Elsevier

European Rare Bone Forum (ERBF)

European Registry for Rare Bone and Mineral Conditions (EuRR)

International Conference on Children’s Bone Health (ICCBH)

International Federation of Musculoskeletal Research Society (IRFMRS)

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.
OSTEOPOROSIS: THE LINK BETWEEN EXPERIMENTAL FINDINGS AND CLINICAL OBSERVATIONS

Saturday 7 May 2022, 13.30–14.30 EEST
Messukeskus Siipi Conference Centre, Helsinki, Finland

PROGRAMME

Chair’s welcome
Heikki Kröger (Finland) and Núria Guañabens (Spain) 13.30–13.40

New insights into denosumab mechanisms of action in relation to its long-term and off-treatment effects on bone
Serge Ferrari (Switzerland) 13.40–14.15

Q&A, Audience questions
Serge Ferrari (Switzerland), Heikki Kröger (Finland) and Núria Guañabens (Spain) 14:15-14:30

This symposium is only open to healthcare professionals who are registered for the ECTS 2022 Congress
Exhibitor and Supporter Company Profiles

Abiogen Pharma S.p.A.
FIVE GENERATIONS OF EXCELLENCE
Abiogen Pharma is a privately owned specialist pharmaceutical company focused on bone metabolism and some rare diseases. The Company was founded in 1997 by Massimo Di Martino who decided to maintain the family’s tradition alive after the sale of Istituto Gentili, founded by his great grandfather Alfredo Gentili, to Merck Sharp & Dohme.

Today, it represents a highly successful family business reality that boasts a position among the top 30 pharmaceutical companies in Italy.

Abiogen Pharma now operates on three integrated areas of activity:
• research and development
• the production of its own and customers’ products
• the marketing of its own and in license products

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.
Ascendis
Ascendis Pharma is delighted to be participating in ECTS 2022!

Founded in 2007 to leverage the innovative TransCon® technology to make a meaningful difference for patients, we are a dynamic, growing biopharma company with offices in Denmark, Germany and the United States. We’re advancing programs and product candidates in both endocrinology and in oncology.

Ascendis is a sponsor of ECTS 2022. Please visit our booth in the Exhibition Hall, and online at Ascendis-ECTS.com

Join us for Ascendis’ Oral Presentation, “Efficacy and Safety With TransCon PTH for Adults With Hypoparathyroidism Through Week 84 in the PaTH Forward Trial.”

Blueprint Genetics

Blueprint Genetics, a Quest Diagnostics company, is a leading specialty genetics and bioinformatics company focused on inherited diseases. With a patient-first mindset, we deliver high-quality genetic testing to the global clinical community across 15 medical specialties. Our superior capabilities in difficult-to-sequence regions, high-resolution CNV detection, clinically relevant non-coding variants and the availability of mitochondrial analysis bring you the most comprehensive genetic test on the market. Blueprint Genetics is based in Helsinki and Seattle with a customer base spanning over 70 countries.

www.blueprintgenetics.com

Bruker Biospin GmbH

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. Bruker SkyScan scanners have been essential tools for bone researchers for more than 2 decades. In-vivo imaging with physiological monitoring is within proven safe dose limits. Scanners are supplied with comprehensive analysis software featuring high speed GPU reconstruction, versatile volume of interest selection tools including trabecular-cortical separation, calibrated BMD/TMD, comprehensive 3d and 2d parameters (ASBMR-compliant) and customisable batch operations. In-depth bone research and morphometry support is provided. Bruker-MicroCT customers are closely supported by 66 distributors worldwide.
**Calciscon AG**

Calciscon (Switzerland) markets breakthrough diagnostic solutions to assess and improve everyone’s **Calcification-related Cardiovascular Risk**. Managing vascular calcification is a critical concern for avoiding cardiovascular (CV) complications. The T50® test is the first and only blood test to measure calcification propensity, providing a unique, functional insight into the physiological mineral buffer system.

T50 has been extensively studied in kidney patients (13,000+ patients) and the general population (6000+ participants), and was consistently found to independently predict CV events and death. The medical community has now started to investigate T50 in CV population, and other diseases known to be affected by calcification.

**Elsevier**

Elsevier journals in the musculoskeletal field provide a stage for global research collaboration. Our journals, broad ranging in scope, serve the research needs of educators, clinicians, researchers and students forging developments and discoveries with significant real-world impacts. Browse our journals and books here: https://www.sciencedirect.com/browse/journals-and-books

**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 Helsinki at our booth. www.ectsoc.org

**European Rare Bone Forum (ERBF)**

European rare bone forum is a patient-led forum and networking arena between Patient Organisations, Scientific Societies and Industry working in Rare Bone conditions with the aim discuss and network, fostering early collaborations, improve health outcomes and care for people living with rare bone conditions and empower the rare bone community across Europe.

**European Registry for Rare Bone and Mineral Conditions (EuRR)**

The European Registries for Rare Bone and Mineral Conditions (EuRR-Bone) aim to support the needs of the endocrine and bone community by facilitating the collaboration between patients, health care professionals and researchers across Europe and beyond. EuRR-Bone offers two open access platforms to capture rare conditions covered within the reference networks ERN BOND and Endo-ERN. The registries are open to all professionals involved in the care of these conditions.
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. The biennial ICCBH conference is attended by over 600 delegates from across the globe, making it truly multinational and multidisciplinary – a unique networking opportunity.

Upcoming events:
10th International Conference on Children’s Bone Health
2-5 July 2022, Dublin, Ireland
ICCBH Bone School
29 June to 1 July 2022, Dublin, Ireland
A 3-day educational course on paediatric bone health and rare bone diseases

14th International Conference on Osteogenesis Imperfecta
30 August to 2 September 2022, Sheffield, UK
ICCBH New Investigator Networking Group

Aims: To keep the community connected and support career development.
Target audience: Early career clinical and basic researchers with focus on paediatric bone health from anywhere in the world.
To find out more please contact the NI group organisers: Adi Raimann and Marie-Eve Robinson at iccbh-ni@googlegroups.com.

Website: www.iccbh.org

International Federation of Musculoskeletal Research Society (IFMRS)

The IFMRS is an international, not-for-profit federation of musculoskeletal research societies. Our purpose is to promote excellence in the field of musculoskeletal science, in order to improve the prevention and treatment of all musculoskeletal conditions worldwide.

We do this by collaborating with, and fostering collaboration between, local, regional and international organizations to share information and resources, raise public awareness, influence policy and provide education.

We bring together major musculoskeletal research societies from across the world, with a combined membership of over 15,000.

Inozyme Pharma, Inc.

Inozyme Pharma, Inc. is a clinical-stage rare disease biopharmaceutical company developing novel therapeutics for the treatment of diseases of abnormal mineralization impacting the vasculature, soft tissue, and skeleton. Through our in-depth understanding of the biological pathways involved in mineralization, we are pursuing the development of therapeutics to address the underlying causes of these debilitating diseases. It is well established that two genes, ENPP1 and ABCC6, play key roles in a critical mineralization pathway and that defects in these genes lead to abnormal mineralization. We are initially focused on developing a novel therapy, INZ-701, to treat the rare genetic diseases of ENPP1 and ABCC6 Deficiencies.
IPSEN
Ipsen is a leading global biopharmaceutical company focused on innovation and Specialty Care. It develops and commercializes innovative medicines in three key therapeutic areas – Oncology, Neuroscience and Rare Diseases. Active in the rare diseases field for many years, Ipsen brings scientific advancements to patients and invests significantly in R&D, leveraging global expertise and a local presence. Ipsen is committed to making innovative new treatments available to people living with rare diseases.

For more information on Ipsen, please visit www.ipsen.com.

Nestle Nutrition a division of Nestlé Enterprise S.A
The Nestlé Nutrition Institute (NNI), as a non for profit association in Switzerland, shares leading science based information and education with practicing health professionals in all parts of the world.

NNI is committed to foster the highest levels of discussion within scientific community and build nutrition knowledge globally. All NNI exclusive resources are available at http://www.nestlenutrition-institute.org.

Osteogenesis Imperfecta Federation Europe (OIFE)
Osteogenesis Imperfecta Federation Europe (OIFE) is an umbrella association for 37 organizations dealing with the rare condition Osteogenesis Imperfecta (OI) also known as brittle bone disease.

Our mission is to connect and empower organizations, professionals and individuals to improve lives of people with OI.

OIFE’s ordinary member organizations are European and our main activities are based in Europe. But we collaborate with OI-organizations around the world with the intention to exchange ideas, information and best practices.

OIFE is a member of EURORDIS – the umbrella for rare disease organizations in Europe.

PHARMATEST
PHARMATEST is a preclinical CRO offering in vitro assays, in vivo efficacy models and ex vivo bone analysis services in the fields of skeletal diseases and oncology.

We are the leading experts in combining bone biology and cancer by having special expertise in bone metastases.

Our models of skeletal diseases include osteoclast and osteoblast in vitro studies and animal models of osteoporosis, osteoarthritis and rare bone disease.

Ex vivo services cover complete histomorphometry and non-invasive imaging for bone and soft tissue and large panel of biomarkers for preclinical and clinical samples.
SCANCO Medical AG

Scanco Medical AG (www.scanco.ch), established 1988, is a global provider of microCT, VivaCT and XtremeCT (HR-pQCT) systems as well as scan/analysis services. Systems are bundled with sophisticated, easy to use, analysis and visualization software as well as automatic specimen changers (specimen systems only).

Scanco Medical is the only company which offers a fully integrated optional Finite Element Analysis Software package with its systems. Optional hardware include a mechanical testing stage and GPU reconstruction engine.

Scanco Medical is also pleased to announce the availability of complete Windows® based systems beginning 2021. We wish all ECTS participants the best for the future.

Stratec Medizintechnik

Stratec Medizintechnik is the 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 (www.ucb.com) 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.

With 7 500 people in approximately 40 countries, UCB is continuously working to advance science and embrace new knowledge.

We are leveraging scientific advances and skills in areas such as genetics, biomarkers and human biology.

Patients inspire us to bring them value through cutting-edge science, innovative drugs, and practical solutions – so that they and their carers can get on with their lives.
Corporate Industry Symposia

Sunday, 08 May 2022

14:45 – 16:15  Industry Symposium UCB BIOPHARMA  
Auditorium 103
The basis of bone-building: Exploring the mechanisms by which bone-forming therapies impact bone strength

14:45 – 14:50  Welcome and introduction  
Ralph Müller (Switzerland)

14:50 – 15:05  The anatomical significance of bone modeling and remodeling  
Ralph Müller (Switzerland)

15:05 – 15:20  The impact of bone-forming on bone compartmental structure  
Richard Abel (United Kingdom)

15:20 – 15:35  Translating therapeutic effects into clinical outcomes  
Roland Chapurlat (France)

15:35 – 16:10  Q&A/panel discussion  
All, led by Ralph Müller (Switzerland)

16:10 – 16:15  Conclusion and closing remarks  
Ralph Müller (Switzerland)

This symposium is sponsored and organised by UCB and co-supported by Amgen.
A UCB-sponsored satellite symposium at the 49th Annual Meeting of the European Calcified Tissue Society

The basis of bone-building: Exploring the mechanisms by which bone-forming therapies impact bone strength

Sunday, 8 May 2022 / 14:45–16:15 EEST / Plenary Hall II, Room 103, Ground Floor

Professor Ralph Müller, Chair
Institute for Biomechanics
ETH Zurich, Switzerland

Dr Richard Abel
Imperial College London,
UK

Professor Roland Chapurlat
Université Claude Bernard-Lyon 1, France

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This symposium is only open to healthcare professionals who are registered for the ECTS 2022 Congress

We look forward to welcoming you
Corporate Mini Symposia

Saturday, 07 May 2022

13:30 – 14:30 Corporate Mini Symposium
Amgen (Europe) GmbH
Osteoporosis: the link between experimental findings and clinical observations

13:30 – 13:40 Welcome and introduction
Heikki Kröger (Finland)

13:40 – 14:15 New insights into denosumab mechanisms of action in relation to its long-term and off-treatment effects on bone
Serge Ferrari (Switzerland)

14:15 – 14:30 Q&A session and meeting close
Serge Ferrari (Switzerland)
Heikki Kröger (Finland)
Núria Guañabens (Spain)

Sunday, 08 May 2022

19:00 – 20:00 Corporate Mini Symposium
Meeting Room 207
Supported by an independent educational grant from Ipsen
Exploring how people living with Rare Bone Diseases can contribute to the drug development process: Design for them or with them?

19:00 – 19:10 Collaborative research with people living with Rare Bone Diseases and advocates – why, when, and how
Inês Alves (Portugal)

19:10 – 19:25 Exploring how people living with Rare Bone Diseases can inform Early Research
Oliver Semler (Germany)

19:25 – 19:40 Exploring how people living with Rare Bone Diseases can inform Clinical Research
Clemens Stockklausner (Germany)

19:40 – 20:00 Panel discussion and Q&A
All speakers, led by Inês Alves (Portugal)
General Congress Information
COVID-19 Information

COVID-19 measures at the venue

ECTS is looking forward to hosting the 49th ECTS Congress as a physical event with the support of live streaming. Your safety is our priority.

We have booked large rooms with high ceilings, which are equipped with reliable air filters that exchange and provide fresh air around the clock. Catering points, exhibition and poster areas have been arranged to keep safe, but friendly distance. Sanitising stations will be provided in all areas of the conference.

All delegates are expected to act responsibly towards the health of their peers. Staff will be available onsite to address questions or concerns.

The COVID-19 guidelines below are based on pandemic conditions and restrictions issued by the Government of Finland in March 2022 and will be adjusted according to actual conditions at the time of the event.

Entry

- COVID-19 Certificate of full vaccination or negative PCR tests are not mandatory to enter the venue, but please make sure to comply with COVID-19 regulations for travel to Finland.
- Only come if you are healthy

Face Mask

- Wear a face mask at all times
- Face masks are not mandatory during consumption of food and drinks

Social Distancing

- You are encouraged to observe social distancing (we recommend 1,5m)
- Follow basic hygiene rules
- Pay contactless if possible

Hand Sanitizers

- Please use regularly the hand sanitizers stations located throughout the venue

Testing

- A list of COVID-19 Testing Centers is available on the ECTS 2022 Website and App and can be obtained by the staff onsite.

COVID-19 Measures in Finland

To find the latest corona protection measures of the congress center, please visit: https://messukeskus.com/korona/

And have also a look at the current Corona measures in Finland: https://valtioneuvosto.fi/en/information-on-coronavirus/current-restrictions
Opening Hours

Registration Counter Pre-Congress, Friday, 06 May 2022
Pre-Congress delegates can pick up their name badges at the registration counter located in the entrance hall on the 1st Floor of the Messukeskus Siipi Conference Centre on Friday 10 May 2022, from 09:00.

Registration Counter
The registration counter is located in the entrance hall on the 1st floor of the Messukeskus Siipi Conference Centre and open at the following times:

- Friday, 06 May 2022: 09:00 – 20:30
- Saturday, 07 May 2022: 07:15 – 20:00
- Sunday, 08 May 2022: 07:30 – 19:30
- Monday, 09 May 2022: 07:30 – 19:30
- Tuesday, 10 May 2022: 07:30 – 14:00

Exhibition
The Exhibition Area is located on the 1st Floor and open during the following times:

- Saturday, 07 May 2022: 08:30 – 18:00
- Sunday, 08 May 2022: 09:00 – 18:00
- Monday, 09 May 2022: 09:00 – 18:00

Speakers’ Media Center
The Speakers’ Media Center is located on the 2nd Floor, in room 214, and is open during the following times:

- Friday, 06 May 2022: 13:00 – 19:00
- Saturday, 07 May 2022: 07:15 – 19:30
- Sunday, 08 May 2022: 07:30 – 19:30
- Monday, 09 May 2022: 07:30 – 19:30
- Tuesday, 10 May 2022: 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. These may be scanned by exhibitors/supporters to access the 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:

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Please note that your delegate badge will also be your entrance ticket to the City Hall Reception and Networking Dinner. To be admitted to the City Hall Reception and Networking Dinner, you need to bring your delegate badge.
Certificate of Attendance

To obtain CME accreditation, please visit the registration desk daily to have your badge scanned for attendance tracking and 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 form.

Congress App

Are you looking for additional information on the congress or ECTS? Download the ECTS Society App to Access all information on ECTS 2022!

The app allows you to:
• Access ECTS 2022 by clicking on the respective congress tile and pressing “install”
• Access the event programme, posters and the 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
• Chat with other attendees

Interactive app features

The following interactive app features are available for selected sessions this year:

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

In session voting
You can now actively be part of selected sessions by using your app to vote and choose your option and/or response to designated questions by the speaker.

Do you have any questions? Don’t hesitate to contact us! ects@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.

Congress Online Platform

All sessions in Auditorium 101 and Auditorium 103 will be live streamed to the virtual platform. Attendees to the virtual congress will receive an email with their log-in information two days prior to the congress.

In case you run into any problems, please send us an email to ects@interplan.de. The virtual platform will also have a helpdesk that is open during the following times:

Helpdesk
Saturday, 07 May 2022:  07:30 – 19:15
Sunday, 08 May 2022: 07:30 – 19:00
Monday, 09 May 2022: 07:30 – 19:00
Tuesday, 10 May 2022: 07:30 – 14:30
Wi-Fi and Social Media

**WI-FI**
Wi-Fi access will be available throughout the venue, free of charge.
SSID: ECTS2022
Password: ECTS2022

**Social Media**
Twitter: You can view the ECTS Congress 2022 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. Type your tweet using the #ECTS2022 hashtag.
Networking Programme
Official ECTS 2022 Events

Welcome Reception
Saturday, 07 May 2022
19:00 – 21:00, Messukeskus Siipi Conference Centre, Exhibition Area

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 Finnish finger food in the casual atmosphere of the Messukeskus Siipi Conference Centre.

Ticket: Included in Registration Fee

ECTS Charity Run

#ECTSCharityRun

Sunday, 08 May 2022
20:15 – 22:00 in Töölönlähti Bay

This is a fundraising event organized by the ECTS and ECTS Academy to bring together members, corporate supporters, friends and members. For this year, the ECTS Academy has organised a charity run of 5km or a walk of 1 km to raise money. This is all for a good cause, but is also supposed to be fun and a good opportunity to bring together members, corporate supporters and friends. So, get your friends and colleagues together and join the #ECTSCharityRun.

Ticket: Separate registration required.

New Investigator Seminar & Gathering

Monday, 09 May 2022
19:00 – 20:00, Messukeskus Siipi Conference Centre, Room 206

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!
City Hall Reception

Monday, 9 May 2022  
20:00 – 21:00, Venue: City Hall Helsinki

The city of Helsinki is sponsoring a reception at the city hall for all ECTS attendees. This will be an informal gathering where you are able to network with other attendees over a glass of wine and some canapes.

Please note that your delegate badge will also be your entrance ticket to the City Hall Reception. To be admitted to the reception, you need to bring your delegate badge.

Supported by Helsinki

Networking Dinner

Monday, 09 May 2022  
21:00 – 24:00 at Valkoinen Sali

Valkoinen Sali (White Hall) is one of the most historically significant venues in Helsinki and almost 100 years old. It is located in the heart of the city, opposite the Helsinki Cathedral and just a 2-minute walk from the City Hall, where earlier in the evening the reception takes place. It is an extraordinary place for focusing on networking in a relaxed atmosphere. Cold buffet will be provided and will offer a great opportunity to mingle and reconnect with old acquaintances or make new contacts.

Ticket: Delegate fee: EUR 50 per person incl. VAT  
Accompanying person’s fee: EUR 70 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.

Limited number of tickets available.
# Invited Faculty Index

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