



UNIVERSITÀ
di VERONA

Scuola
di **MEDICINA
E CHIRURGIA**



Verona University Medical School: Summer School

2nd Edition – 17-21 September, 2018

PhD School: Life and Health Sciences

THE BASICS OF BONE IN HEALTH AND DISEASE: A JOURNEY FROM LAB BENCH TO BEDSIDE

Education, tools, and innovations to optimize your patient outcomes

Verona University Medical School at Policlinico Borgo Roma, Verona

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Organizational Secretary and Provider: n. 314 Radiovision

CME Credit: 47,9

SCIENTIFIC PURPOSE AND AIMS

Musculoskeletal diseases are one of the most important clinical areas among the Western population in terms of prevalence, incidence and morbidity. An in-depth knowledge of the physiological mechanisms underlying skeletal homeostasis and the main alterations leading to the disease together with the analysis of all clinical and laboratory aspects necessary for the management of these disorders as well as the available therapeutic strategies are essential elements to adequately approach and manage such diseases. **The course aims at providing the widest possible theoretical and practical notions on the different aspects of the bone in the various stages of life.** To this end, the course ranges from anatomy, biology and genetics lectures to more strictly clinical and therapy/management topics, including translational research subjects with the aim of providing trainees with updated tools for the management and treatment of patients affected by skeletal diseases. In the light of the complementarity and overarching nature of the topics it deals with, the course is intended for both staff in training, who will have a chance to supplement their knowledge, and specialists wishing to implement, sharpen and update their diagnostic and therapeutic knowledge. The Faculty of the course, made up of lecturers of national and international renown, will also include Prof. Papapoulos from the University of Leiden and Prof. Chapurlat from the University of Lyon who will contribute to further widening the information supplied in the training course by sharing the experience of prestigious European universities.

September 17th

Monday morning: *Biological Science of Bone*

8.30 Registration

9.00 Bone cell biology (Monica Mottes, Verona)

10.00 Genetics of bone (Giovanni Malerba, Verona)

11.00 New applications of the genome editing techniques to discover bone pathways (Donato Zipeto, Verona)

- 12:00 Effects of physical activity on osteogenic gene expression (Samuele Cheri, Verona)
12:30 Multiomics approach to exploit the osteogenesis imperfect (Michela Deiana, Verona)

13.00-14.00 Lunch

Monday afternoon:

14.00 – 18.00 Molecular biology workshop (Maria Teresa Valenti, Verona)

20.00 Meet the expert and share the knowledge (practical session)

September 18th

Tuesday morning: *Methods to study the bone*

9.00 The morphology of normal bone and new insights in bone tissue regeneration (Andrea Sbarbati, Carlo Zancanaro, Verona)

10.00 Animal models for the study of muscle-skeletal system:

a. Bone metabolism throughout life: from animal models to the clinic (Luigi Gennari, Siena)

b. Blood and Bone, *mouse* (Lucia De Franceschi, Verona)

c. Muscle and Bone, *zebra fish* (Andrea Vettori, Padova)

13.00-14.00 Lunch

Tuesday afternoon: *Diagnosis of metabolic bone diseases*

14.00 Biochemical evaluation (Gianluca Salvagno, Verona)

15.00 Laboratory: Methods of evaluation of bone density and composition
Methods of evaluation of physical performance (Francesco Fantin, Andrea Rossi, Verona)

16.00 Osteopenia and Sarcopenia in the elderly: two sides of the same coin (Mauro Zamboni, Andrea Rossi, Verona)

17.00 Practical applications (Luca Dalle Carbonare, Verona)

September 19th

Wednesday morning: *Bone diseases in specific settings*

9.00 Rare bone diseases (Roland Chapurlat, Lyon – Fr)

10.00 Bone diseases and immunology (Claudio Lunardi, Verona)

Bone diseases in the Childhood

11.00 Pathophysiology of bone diseases in childhood (Franco Antoniazzi, Verona)

12.00 Focus on facial skeletal bone malformations in pediatrics (Francesca Zotti, Massimo Albanese, Verona)

13.00-14.00 Lunch

Wednesday afternoon: *Bone diseases in the Childhood*

14.00 Nutrition and bone: pediatric point of view (Angelo Pietrobelli, Verona)

15.00 Growth and Rehabilitation (Ermete Vedovi, Verona)

16.00 Oncologic bone diseases in childhood (Simone Cesaro, Verona)

17.00 Practical applications (Luca Dalle Carbonare, Verona)

September 20th

Thursday morning: *Pharmacological Therapy*

- 9.00 Vitamin D: not only effects on bone metabolism (Angelo Pietrobelli, Verona)
- 10.00 Bisphosphonates and antiresorptive drugs (Gianantonio Saviola, Brescia)
- 11.00 Anabolic drugs (Maurizio Rossini, Angelo Fassio, Verona)
- 12.00 Nutraceutical adjuvant therapy (Luca Dalle Carbonare, Verona)

13.00-14.30 Lunch

Thursday afternoon:

- 14.30 16.30 Aula Magna -Lectio Magistralis: New therapeutic frontiers in bone diseases
Prof. Socrates Papapoulos (Leiden, NL)

Free time

September 21st

Friday morning: *Surgical Therapy*

- 8.30 Orthopedic surgery in children and adults (Bruno Magnan, Verona)
- 9.30 Spine deformities and orthopedic approach (Massimo Balsano, Verona)

Physical medicine and rehabilitation in bone dysfunction

- 10.30 Rehabilitation of vertebral and non vertebral fractures (Alessandro Picelli, Verona)
- 11.30 Physical Therapy (Marialuisa Gandolfi, Verona)
- 12.30 CME Questionnaire
- 13.00 Conclusions

13.15 Lunch