

8th

FESTEM 2022



International Symposium of the
Federation of European Societies
on Trace Elements and Minerals

SEPTEMBER 28TH
TO OCTOBER 1ST, 2022

Madrid

www.festem2022.com



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WELCOME

Welcome to Madrid!

Dear friends and colleagues,

On behalf of the **Federation of European Societies on Trace Elements and Minerals (FESTEM)**, we are pleased and honoured to invite you to our 8th International Symposium, "Recent Advances in Trace Elements. From the Bench to the Bedside", to be held from Wednesday 28th September to Saturday 1st October 2022 in Madrid, Spain.

FESTEM is a non-profit organization made up of societies from France (SFERETE), Germany (GMS), Italy (AISETOV), Romania (SROM), Russia (RUSTEM) and Spain (SEQCML), with the aim of encouraging a variety of activities in the field of trace elements and minerals.

The national and international organizers are doing an exceptional job in putting together a broad programme that includes not only analytical aspects, but also topics related to epidemiology, occupational and medical toxicology, supplementation, as well as human and animal health and disease, among others.

This Symposium is a great opportunity to attend conferences led by well-known international speakers, share knowledge with other professionals, establish new social and professional relationships and learn about future trends in trace elements.

For us personally, it is a pleasure to hold this Symposium in Spain, and I am particularly happy to host it in my home city of Madrid, a vibrant, cosmopolitan city with a great deal to offer — art and culture, history, design and tradition, gastronomy, entertainment, nightlife and, above all, the optimism and hospitality of the "Madrileños". We wish all of you a productive and interesting Symposium and an enjoyable stay in Madrid.

Yours sincerely

Prof. Montserrat González Estecha, MD, PhD

FESTEM President

Hospital General Universitario Gregorio Marañón. UCM. Madrid. Spain

Dr. Antonio Buño

President of the Spanish Society of Laboratory Medicine SEQCML



SCIENTIFIC COMMITTEE

Montserrat González Estechea (FESTEM President)

Marco Vinceti (FESTEM Vicepresident)

Dirk Schaumlöffel (FESTEM General Secretary)

Muriel Bost (FESTEM Treasurer)

Tanja Schwerdtle (Delegate of JTEMB)

Margherita Ferrante

María Teresa Llorente Ballesteros

Laurent Chavatte

Florin Muselin

Alexandru Doma

ORGANIZING COMMITTEE

Montserrat González Estechea (Spanish Trace Element Commission, SEQC-ML. Department of Laboratory Medicine, Hospital General Universitario Gregorio Marañón HGUGM)

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Silvia Izquierdo Álvarez (Spanish Trace Element Commission, SEQC-ML)

Eloísa Urrechaga Igartua (Spanish Trace Element Commission, SEQC-ML)

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Rosa Rodríguez Fernández (Department of Pediatrics. HGUGM)

José María Ordóñez Iriarte (Universidad Francisco de Vitoria. General Directorate for Public Health. Consejería de Sanidad. Comunidad de Madrid)



ACCREDITATION

The 8th International Symposium of the Federation of European Societies on Trace Elements and Minerals FESTEM 2022, Madrid, Spain, 28/09/2022-01/10/2022 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 14 European CME credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.”

Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME® credit to AMA credit can be found at:

www.ama-assn.org/education/earn-credit-participation-international-activities.

Live educational activities, occurring outside of Canada, recognised by the UEMS-EACCME® for ECMEC®s are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada.

EACCME®





PROGRAM

WEDNESDAY SEPTEMBER 28TH

13:00-15:00 FESTEM BOARD MEETING

15:00-16:00 REGISTRATION

16:00-16:30 WELCOME AND OPENING CEREMONY

16:30-17:00 PLENARY LECTURE

Chairperson:

Montserrat González-Estecha

Changes with time of human exposure to toxic trace elements

Paola Borella

17:00-18:45

SESSION I: ENVIRONMENT AND TOXICOLOGY

Chairpersons: Marco Vinceti and Florin Muselin

17:00-17:30 **Zn and Mn interaction in the nematode *C. elegans***

Julia Bornhorst

17:30-18:00 **New trends in toxicological experimental models**

Cristina Dehelean

18:00-18:45 **ORAL COMMUNICATIONS:**

Probabilistic contribution to the Provisional Tolerable Weekly Intake of mercury (chronic and acute) due to the consumption of wild edible mushrooms by consumers.

Alicia Moreno-Ortega

Universidad de Córdoba, Córdoba, Spain.

The study of trace elements in cannabis: A review of selected literature

Ait Belcaid Hind

Water, Biodiversity and Climate Change Laboratory, Department of Biology, Faculty of Science Semlalia, Cadi Ayyad University, Marrakech, Morocco.

Arsenolipids - the new emerging contaminants in fish and seafood?

Tanja Schwerdtle

Federal Institute for Risk Assessment, Berlin, Germany.

18:45

WELCOME COCKTAIL



THURSDAY SEPTEMBER 29TH

09:00-11:00

SESSION II: TRACE ELEMENTS AND CARDIOVASCULAR DISEASES

Chairpersons: Marguerita Ferrante and Montserrat González-Estecha

09:00-09:30

Trace elements and cardiovascular risk in epidemiologic studies: evidence, mechanisms and opportunities for prevention
María Téllez-Plaza

09:30-10:00

Association between toxic metal exposure and hypertension
Mónica María Bastos Paoliello

10:00-11:00

ORAL COMMUNICATIONS:

Sodium intake and cardiovascular diseases: a systematic review and dose-response meta analysis

Marcella Malavolti

University of Modena and Reggio Emilia, Modena, Italy.

Automated computer-based intervention to identify hypomagnesaemia in primary care patients with cardiovascular diseases

María Salinas

Hospital Universitario San Juan Alicante, Alicante, Spain.

Treatment of arterial hypertension and alterations of calcium metabolism

Luis Guerra-Sánchez

Hospital General Universitario Gregorio Marañón, Madrid, Spain

11:00-12:00

COFFEE BREAK AND POSTER SESSION I

12:00-13:30

SESSION III: SELENIUM AND HUMAN HEALTH

Chairpersons: Laurent Chavatte and Julia Bornhorst

12:00-12:30

Selenocompounds and sepsis
Xavier Forceville

12:30-13:30

ORAL COMMUNICATIONS:

Selenium, infectious disease and immunity in humans: a systematic review of experimental studies with meta-analysis

Tommaso Filippini

University of Modena and Reggio Emilia, Modena, Italy.

Relation between adherence to dietary patterns and serum selenium species levels in a healthy Italian cohort

Teresa Urbano

CREAGEN - Environmental, Genetic and Nutritional Epidemiology Research Center, Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy, Modena, Italy.



Association between serum selenium species and 8-oxo-7,8-dihydro-2'-deoxyguanosine levels: an Italian cross-sectional study

Marco Vinceti

University of Modena and Reggio Emilia, Modena, Italy.

Relation between adherence to dietary patterns and urinary selenium levels in an Italian cohort

Marcella Malavolti

University of Modena and Reggio Emilia, MODENA, Italy.

13:30-15:00

LUNCH

15:00-16:30

SESSION IV: TRACE ELEMENTS, METABOLIC DISEASES AND CANCER

Chairpersons: Tanja Schwerdtle and Irene Bretón

15:00-15:30

Microbiome dysbiosis during obesity and type 2 diabetes

Judith Aron-Wisniewsky

15:30-16:30

ORAL COMMUNICATIONS:

Investigating human selenoproteome regulation by selenocysteine transfer RNA using CRISPR-CAS9 virus-like particles

Laurent Chavatte

CIRI, INSERM, CNRS, ENS de Lyon, UCBL1, Lyon, France.

Total and ionized calcium and magnesium behavior during pediatric liver transplantation

Berta Sufrate Vergara

La Paz University Hospital, Madrid, Spain.

Severe electrolyte imbalance and cancer: a potentially fatal association

Marina López Rubio

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Hypokalemia, metabolic alkalosis and normomagnesemia in a young adult woman

Coraima Claudia Nava Chavez

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

16:30-17:30

COFFEE BREAK AND POSTER SESSION II

17:30-18:30

SESSION V: BIOAVAILABILITY OF TRACE ELEMENTS

Chairpersons: Tanja Schwerdtle and Irene Bretón

17:30-18:00

In vivo studies on trace element bioavailability: framework conditions for improved assessment of efficacy and safety

Daniel Brugger

18:00-18:30

ORAL COMMUNICATIONS:

Trace-elements in human breast milk: establishing reference values

Nouzha Djebrani-Oussedik

Toxicology Department, Lariboisière University Hospital, AP-HP, Paris, France.



Manganese and iron transport interactions in human placental villous trophoblasts

Vivien Michaelis

University of Wuppertal, Faculty of Mathematics and Natural Sciences, Food Chemistry, Wuppertal, Germany.

20:00

DINNER

FRIDAY SEPTEMBER 30TH

09:00-11:00

SESSION VI: TRACE ELEMENTS AND PREGNANCY, CHILDHOOD AND AGEING

Chairpersons: Marguerita Ferrante and María Teresa Llorente Ballesteros

09:00-09:30

Essential and toxic elements in pregnancy

Joanna Suliburska

09:30-11:00

ORAL COMMUNICATIONS:

Minerals and micronutrients during gestation in women with previous bariatric surgery. Consequences on maternal and fetal health

Irene Breton.

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Trace elements in children with sickle cell disease in Madrid

Paula Melero Guardia

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Inadequate zinc intake while receiving solely enteral nutrition in preterm infants in the early weeks of life

Megan Beggs

The Hospital for Sick Children and University of Toronto, Toronto, Canada.

Role of chloride in predicting edema in hospitalized children receiving maintenance intravenous fluids

Jimena Perez Moreno

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Analysis of the need for intravenous iron in women with severe postpartum haemorrhage requiring transfusion. Influence of prepartum anaemic status

Juan Manuel Pina Moreno

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Deficiencies of copper, selenium and zinc in patients who have undergone bariatric surgery

Patricia Espinosa De Los Monteros Sicilia

Hospital Clínico San Carlos, Madrid, Spain.

11:00-12:00

COFFEE BREAK AND POSTER SESSION III



12:00- 13:30

SESSION VII: TRACE ELEMENTS AND NEUROLOGICAL DISEASES

Chairpersons: Laurent Chavatte and Julia Bornhorst

12:00-12:30

Selenocompounds and neurological disease

Marguerita Ferrante and Marco Vinceti

12:30-13:30

ORAL COMMUNICATIONS:

NAD⁺ Supplementation Attenuates Methylmercury Dopaminergic and Mitochondrial Toxicity in *Caenorhabditis Elegans*

Michael Aschner

Albert Einstein College of Medicine, Bronx, United States.

Copper deficiency myelopathy in Wilson Disease

Nuria Goñi Ros

Hospital Universitario Miguel Servet, Zaragoza, Spain.

Trace elements in high incidence areas of Multiple Sclerosis: a role of volcanogenic ashes?

Chiara Copat

Department of Medical, Surgical Sciences and Advanced Technologies "G.F. Ingrassia", Section of Public Health, University of Catania, Catania, Italy.

Blood and cerebrospinal fluid selenoprotein P levels and risk of progression from mild cognitive impairment to dementia

Marco Vinceti

University of Modena and Reggio Emilia, Modena, Italy.

13:30-15:00

LUNCH

15:00-18:30

SESSION VIII: ESSENTIALITY AND TOXICITY OF TRACE ELEMENTS AND MINERALS

Chairpersons: Muriel Bost and Alexandru Doma

15:00-15:30

Iron: the dark side of and essential nutrient

Eloísa Urrechaga

15:30-16:30

ORAL COMMUNICATIONS:

Severe hyperferritinemia. Hereditary hemochromatosis HFE plus non HFE

Claudia Abadía Molina

Hospital Universitario Miguel Servet, Zaragoza, Spain.

Anemia and iron metabolism disorder in Pica syndrome

Diffaa Azeddine

Water, Biodiversity and Climate Change Laboratory, Department of Biology, Faculty of Science Semlalia, Cadi Ayyad University, Marrakech, Morocco.

Pseudotumor in metal-on metal total hip replacement

Ana Castel-Oñate

Príncipe De Asturias University Hospital, Madrid, Spain.



16:30-17:30

COFFEE BREAK AND POSTER SESSION IV

17:30-18:30

CLINICAL CASES:

Chairpersons: Muriel Bost and Alexandru Doma

Intake of carbonated soft drinks as a rare cause of hypokalaemia

Emina Pervan González

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Hypokalemia in a patient with ACTH-dependent Cushing Syndrome

Miguel Angel Encalada Landiresm

Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Hypomagnesemia and hypocalcemia in recurrent pancreatitis associated with the spink1 gene

Carmen Gracia Puerto Cabeza

Hospital Universitario Miguel Servet, Zaragoza, Spain

SATURDAY OCTOBER 1ST

09:00-10:30

SESSION IX: INNOVATIONS ON TRACE ELEMENT ANALYSIS RESEARCH

Chairpersons: Dirk Schaumlöffel and María Teresa Llorente Ballesteros

09:00-09:30

Role of the iron-regulatory hormone Heparin in inflammatory diseases

Carole Peyssonnaud

09:30-10:00

Trace elements in dry blood spot, a new diagnostic tool

Pilar Bermejo

10:00-10:30

ORAL COMMUNICATIONS:

Trace element localization in cells and tissues by Nano Secondary Ion Mass Spectrometry (NanoSIMS)

María Angels Subirana

IPREM, CNRS-UPPA, Pau, France.

Determination of silver nanoparticles in molluscs by off-line hydrodynamic chromatography and single particle inductively coupled plasma - mass spectrometry

Antonio Moreda-Piñeiro

University of Santiago de Compostela, Santiago de Compostela, Spain.

10:30-11:30

GABRIEL BERTRAND PRIZE 2022

FESTEM AWARD

COMMUNICATION AND POSTER AWARDS

CLOSING REMARKS

TECHNICAL SECRETARIAT

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